Solving Heat Pump Troubles . . . . . Pg. 16

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York Reports Progress, Plans As Elliot Takes Over Top Post

Continued Product Line Expansion Seen

By Phil B. Redeker

YORK, Pa. — "Position of York Div. of Borg-Warner Corp. in the air conditioning and refrigeration industry has been materially strengthened by improvements and changes in organization and direction in the past few years, and plans call for continued expansion in both product and sales effort in the 60's."

So stated top officials of both the York Div. and the parent corporation at a press conference here which coincided with the taking over of the York presidency by Joseph B. Elliot, and some ceremonies marking York's 75th anniversary year.

Present at the conference was R. S. Ingersoll, Borg-Warner president, who emphasized the parent organization's faith in the future of the air conditioning and refrigeration industry, and whose reply to questions indicated that B-W stands ready to expand the company product-wise and in physical facilities when the proper opportunities are presented.

New President Elliot spoke informally at the conference, declaring that as an executive whose experience had been primarily in the manufacture and distribution of consumer durable goods, he has been "attracted to the one industry left in the field where the saturation is low enough to open the way for some aggressive merchandising."

Noting that air conditioning has been widely accepted in the commercial and industrial fields

(Continued on Page 43, Col. 1)

To Subcontractor

Defense Act Rider Seen as Threat by RACCA

WASHINGTON, D. C. — A threat to subcontractors bidding for work from Federal agencies was seen by the Refrigeration & Air Conditioning Contractors Association (national) in a rider to the 1961 Defense Appropriations Act now being studied by the House Appropriations Defense Subcommittee.

The rider, sponsored by the International Association of Machinists, AFL-CIO, would require assignment of more defense contracts to government owned and operated facilities, according to a letter sent by national headquarters to RACCA members. IAM is currently in the news through its strike affecting Atlas missile bases.

The RACCA letter said that

(Continued on Back Page, Col. 3)

U. S. Supreme Court To Review Antitrust Case Involving AGA

WASHINGTON, D. C. — The U. S. Supreme Court has agreed to review an antitrust case involving a charge by Radiant Burners, Inc., Illinois maker of gas furnaces and burners, that the American Gas Association and its members are engaging in "a gigantic conspiracy."

The company asserted that association members refused to do business with any gas equipment manufacturer whose products do not have AGA approval.

The suit was dismissed by a lower court, which ruled that the only business connection AGA and its members had with Radiant Burners was AGA's test of that company's equipment. AGA withheld approval.

Columnist Caen Calls For Cooling In 'Naturally Air Conditioned' Frisco

SAN FRANCISCO — "San Francisco might be 'The City Air Conditioned by Nature' and all that, but real air conditioners are what too many of our stores and offices need. . . ."

So wrote Herb Caen, nationally known columnist for the

(Continued on Page 45, Col. 5)

See 'Improved' Situation on Warranties

But Contractors Want Manufacturers To Review Handling

LOS ANGELES — Manufacturers are gradually dropping the five-year warranty but have not yet reviewed the terms of the one-year warranty as suggested by the resolution of the 1959 national RACCA convention.

This was agreed during a discussion of manufacturer warranties at the quarterly meeting of the California Council of Refrigeration & Air Conditioning Contractors Associations held here recently.

Examples were pointed out wherein due to defects in manufacturing or design during the one-year period, replacement was necessary and the contractor was required to pay most of the cost of replacement.

Also, that contractors very often were only reimbursed for a percentage of these costs or in some instances not at all.

Some contractors indicated that they were starting in to charge back against the manufacturer the cost of replacement of defective equipment.

It was also pointed out that in some instances the reason for the failure was due directly to the contractor and not the manufacturer.

One provision injected into the discussion would provide warranty of the manufacturer be up to acceptance by the customer and that if the failure was due to defects in manufac-

(Continued on Page 4, Col. 5)

Purdue Dedicates Million-Dollar Herrick Laboratory

By George F. Taubeneck

W. LAFAYETTE, Ind.—"Top drawer" perhaps is the best description for the 154 industry leaders who congregated here last weekend to help Purdue university dedicate its million-dollar Herrick Research Laboratory. A high percentage of the major manufacturing firms in the industry were represented by top officials.

"Top drawer" also was the hosting job consummated by Purdue's admirable president, Fred Hovde (an All-American quarterback, Rhodes Scholar, and campus-builder extraordinary) plus his loaded-with-personality assistants — headed by ebullient promoter Bill Fontaine.

Stellar performer among the speech-makers was Ray Herrick, himself. Ray had inaugurated the project with an initial gift of $350,000—which later was supplemented by additional donations from other firms and individuals in the refrigeration and air conditioning industry.

Off-handedly, during his luncheon speech, Ray tossed a

(Continued on Page 45, Col. 1)

Acme Industries Expanding; Cooling Sales Set Records

JACKSON, Mich.—Acme Industries, Inc. will start construction immediately of a 100,000-sq. ft. manufacturing plant on a 50-acre site which it has just acquired in Greenville, Ala., according to K. A. Weatherwax, president.

Future plans provide for increasing this unit, which will be completed in October, to 250,000 sq. ft.

Weatherwax also reported that sales of air conditioning and refrigeration systems by Acme were at record levels during the first three quarters of the company's current fiscal year.

Operations will continue at

(Continued on Back Page, Col. 1)

Inside Dope

By GEORGE F. TAUBENECK

Learn to live and laugh — thus delay your epitaph

Cooper's Bazooka

Belated news: Refrigeration engineer LaMar S. Cooper is the man who invented the bazooka, the famed weapon used so effectively by our GIs during World War II to stop Nazi tanks.

Here's the true story of the birth of the bazooka, which got its name from the gas pipe "musical instrument" made famous by the late comedian, Bob Burns.

While Cooper was doing engineering development work for General Electric during World War II he was asked to come to Washington, D. C. for talks with army ordinance experts.

They told Cooper about the urgent need for a device to launch armor-piercing grenades. Quick action now was imperative.

Cooper started to work on the project at once. On the return train trip from Washington he made sketches and calculations for the first launcher. Within a month the Aberdeen (Md.) proving grounds had his first sample.

On another train to Washington the thought came to Cooper that maybe grenades could be launched as rockets through a long metal tube. Initial calculations indicated that such a tube should be 10-ft. long and mounted on a tripod.

When perfected, the tube was 56 in. long and required no mechanical support. Open at both ends, it was equipped with a simple (flashlight battery) electrical triggering gadget. Two months after the new type launcher was tested, the Army ordered production started within 30 days.

That bazooka probably was the simplest of several inventions created by Cooper. But it gave American armies in Europe and Africa a desperately needed anti-tank weapon, and it was a major factor in halting the German tank force in North Africa.

The development group which Cooper headed during the war created much more complicated weapons—for example, the XB-36 gun turret. The bazooka,

(Continued on Page 12, Col. 1)

Aubry V. Hutchinson, Secretary Emeritus Of ASHRAE, Dies

LAFAYETTE, Ind. — Executive secretary of the American Society of Heating, Refrigerating & Air-Conditioning Engineers from its merger-formed start in 1958 until his retirement in 1959 and similarly allied with precedent American Society of Heating & Air Conditioning Engineers for 36 years, Aubry V. Hutchinson, secretary emeritus, died here June 6.

Hutchinson joined the American Society of Ventilating Engineers (as ASHAE was then termed) in 1922 as manager of publications. He was appointed secretary in 1926 and executive secretary in 1950. When ASHVE

(Continued on Back Page, Col. 1)

Intensify Training Immediately or Face Shortage of Qualified Air Conditioning Servicemen

AT THE SPEAKERS' TABLE during the banquet closing the fourth year of RACCA of Chicago's servicemen's training school are (l. to r.): William Tebeau, training committee; Paul Lytis and Stanley F. Gallus, instructors; Walter McCarty, director of RACCA of Chicago; Guido F. Restagno, chairman of the training committee; T. C. Alexander, president of RACCA-National; Daniel M. Brown, president of RACCA of Chicago; Mrs. Edna Berggren, executive secretary, RACCA of Chicago; John P. Glass of Chase Supply Co.; and Myers S. Axelrod and Charles S. Maynard, training committee.

CHICAGO — "Unless immediate steps are taken to intensively train increased numbers of men, an overwhelming shortage of qualified air conditioning servicemen will soon plague the public, the industry, and organized labor."

This warning was sounded by Daniel M. Brown, president of the Refrigeration & Air Conditioning Contractors of Chicago, in a talk before its Servicemen's Training School graduates, industry suppliers, contractors.

"Because air conditioning now exists in less than 20% of office space, 1% of industry plants, and in only a minute percentage of homes, new systems will continue to be installed at the present high rate during the next 10 to 15 years.

"Each new installation will require competent service and maintenance throughout its life. The replacement market will also add heavily to the demand.

"With an inadequate supply of skill creating great pressures for use of unskilled men for this work, the public will likely experience both excessive costs and dissatisfaction with operation of equipment unless steps are now taken to create a larger source of servicing skill."

Brown pointed out that RACCA of Chicago became aware of the impending problem in 1956, at which time the school was organized by the association for the complete training of young men for this industry. One year ago, Pipe Fitters' Local 597, U.A. recognized the need for such training and has since encouraged expansion and improvement of the program, he noted.

throw your compressor out!*
*outside that is!
STOP
wasting
costly
building
space!
FROZEN FOODS
USE KRAMER
OUTDOOR CONDENSING UNITS
FOR AIR CONDITIONING—COMMERCIAL, INDUSTRIAL & SUPERMARKET REFRIGERATION
Kramer's Outdoor Condensing Units will operate outside without any additional protection or adjustment under all temperatures and weather conditions. They can be used for any application —air conditioning, commercial refrigeration, supermarket application, or industrial refrigeration.
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47 YEARS OF CONTINUOUS ACHIEVEMENT IN HEAT TRANSFER

Dearborn Stove Acquires Sequoia As Subsidiary

DALLAS—Acquisition of Sequoia Mfg. Co., San Carlos, Calif., by Dearborn Stove Co. here through purchase of all Sequoia stock was announced by R. H. Norris, Dearborn president.

Dearborn makes area heating units, evaporative coolers, and outdoor cooking equipment.

Sequoia now will operate as a wholly-owned subsidiary of Dearborn, manufacturing gas-fired central heating and air conditioning equipment. Norris said that while Sequoia will continue marketing operations under its own name on the West Coast, Dearborn plans to have available under its name the full line of central heating and air conditioning units.

H. Robert Kramer, president and general manager of Sequoia, will continue to head the new Dearborn subsidiary. He said no personnel changes are planned.

H. C. Little Buys Tamco To Widen Line

SAN RAFAEL, Calif.—H. C. Little Burner Co., Inc. here has purchased Tamco Corp., Sebastopol, Calif., it was announced by R. H. Ginther, Little's vice president.

Tamco will continue to operate as a separate enterprise.

Tamco manufactures the "Clipper" brand of forced air furnaces and air conditioning equipment and the "Barnes" brand of gas-fired floor furnaces. These products have been marketed regionally in the west. Sales and service will continue through H. C. Little representatives.

The Tamco units will be incorporated in the H. C. Little line, nationally, and distributed through the established Little channels, it was stated.

"This acquisition," said Ginther, "is another step in our policy of expanding the H. C. Little line." Earlier this year, the company added a new line of recessed-in-wall units and a window unit to its sealed "Safti-Vent" family and introduced its "Desert Sun" line of vented wall heaters.

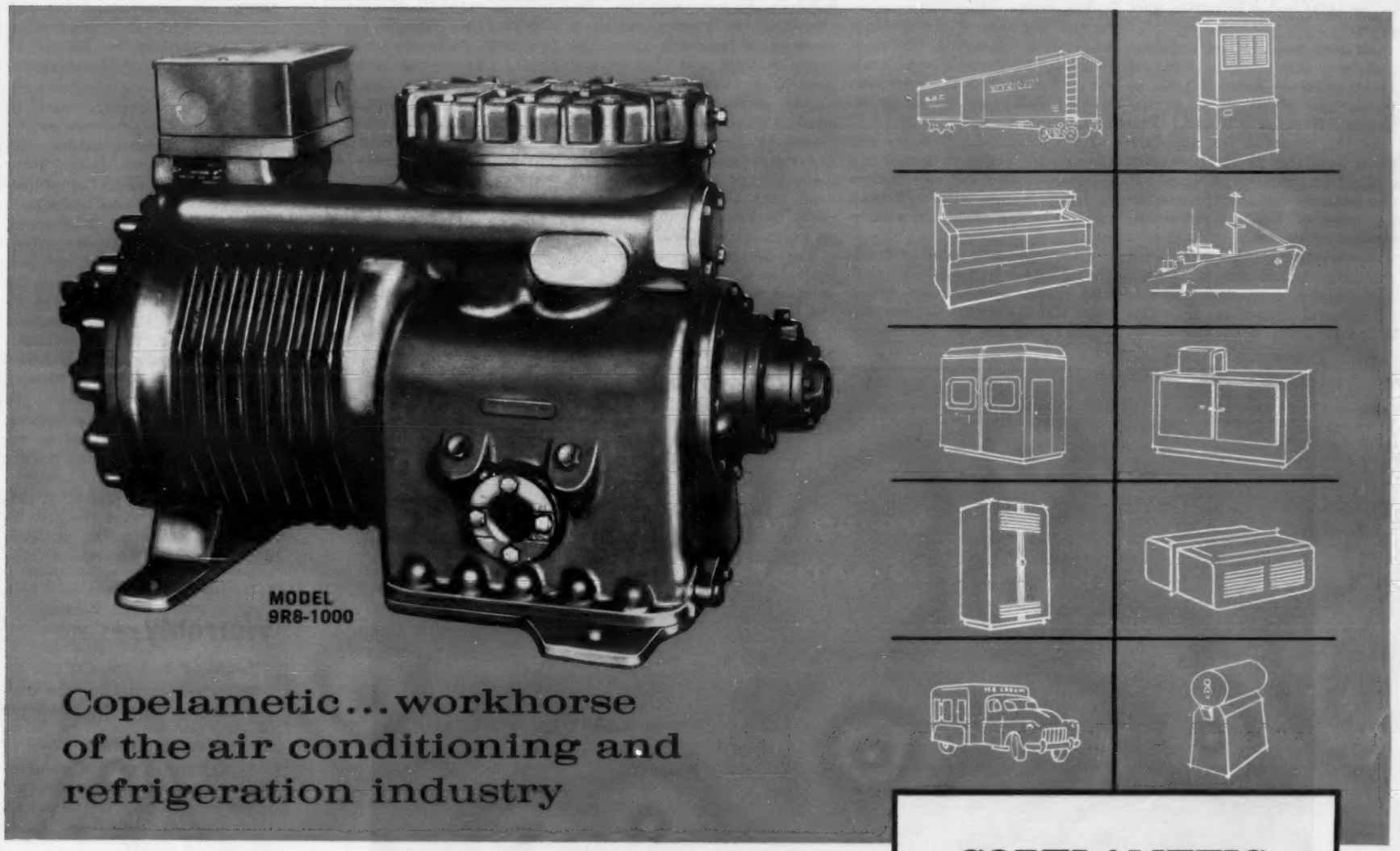
Plan Florida Trip For Janitrol Dealers

COLUMBUS, Ohio — Janitrol Select Dealers will be Florida-bound for their next Goodwill Get-Together, scheduled March 12 through 15, 1961, at Miami Beach's new Deauville hotel.

Harry C. Gurney, general sales manager, said the annual two-day event is being extended to three days as a part of a new format that features morning business meetings, with afternoons free for informal discussions or recreation.

Select Dealers attain their positions by maintaining high technical and merchandising standards and the fulfillment of franchise agreements, it was explained.

To keep your customers satisfied Copeland has what it takes!



Satisfied customers are our most valuable asset and convincing proof that Copeland has what it takes.

Over the years, manufacturers and dealers have ordered and re-ordered the Copelametic Accessible Hermetic, mainstay of the Copeland line. They have found Copelametics provide the outstanding performance features and lasting dependability essential to the success of a product or an installation.

This enthusiastic acceptance has enabled us to produce Copelametics in growing numbers and for a wider variety of applications.

Today's Copelametic is basically the same, high quality motor-compressor introduced 21 years ago . . . relatively unchanged because the original design continues to meet the most exacting requirements. Years of service in the field have proved its suitability for all applications . . . high, commercial, low and extra-low.

Investigate the advantages of Copelametics for your products or installations. You'll find Copeland has what it takes.

COPELAMETIC FEATURES

- Complete accessibility to all working parts permitting on-the-job service and parts replacement.
- Positive lubrication systems.
- High output per watt-hour.
- No belts, seals or manual oiling, thus eliminating causes of 90% of motor-compressor failures.
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AVAILABLE in air-cooled, water-cooled and suction-cooled models. Including new four-cylinder and six-cylinder models, sizes range from ¼ H. P. through 30 H. P. Request Specification Sheet 5907.

SINCE 1918 **Copeland** REFRIGERATION CORPORATION, Sidney, Ohio

Fedders Dealers on Trips to France, Israel To Share In Culture Exchange

MASPETH, N. Y. — A program of international cultural exchange has been announced by Fedders Corp. as an adjunct to its 1960 travel incentive program.

As reported earlier, approximately 1,000 people will be taken to Israel, another 1,000 to Paris, and about 4,000 to the Grand Bahama Island. The trips, to begin in the fall, are made available to retail dealers and their families throughout the country for their outstanding sales of Fedders air conditioning products.

Fedders is incorporating with the large movement of American dealers, a varied schedule of cultural exchange activities in cooperation with the U. S. government-endorsed "People-to-People" program, according to U. V. Muscio, executive vice president.

He said the "People-to-People" segment of the Fedders program is designed to reach all levels of French and Israel society: the student, the "man in the street," and the businessman.

For the student, Fedders will arrange for the high school age children of two Fedders dealers to trade homes with a French and an Israeli child for a summer.

Also, French and Israeli grade school will be "twinned" with grade schools in towns from which Fedders dealers will be traveling for the purpose of exchanging tape-recorded greetings. The dealers will be the "couriers."

A pictorial panorama of "Life in America" is a project planned to better acquaint the people of France with Americans. Photographs, submitted by newspapers, of a typical day in the cities of the traveling Fedders dealers will be displayed to the French public. A message of greeting from the cities' mayors will also be displayed. A similar exhibit of French scenes may be circulated throughout the United States by Fedders distributors.

Arrangements are also being made for the Fedders dealers to meet with their retail counterparts in France and Israel for an exchange of ideas.

The details for the cultural exchange program are being developed with the cooperation of the U. S. Information Agency.

Muscio stated that the inclusion of such a cultural program as an adjunct to a travel incentive promotion is long overdue. "Large companies with international travel programs should be encouraged to better utilize their facilities in the area of international understanding."

Daddario Heads Assn.

MYRTLE BEACH, S. C. — Frank T. Daddario of Durham, N. C., was elected president of the Heating & Air Conditioning Research & Development Association during the group's recent annual convention here.

New vice presidents elected were W. O. Blackstone of Columbia, S. C., Sam R. McCoy of Orlando, Fla., David Moser of Asheville, N. C., and Milford Weaver, Collinsville, Va.

Dr. E. A. Fails and D. S. Shepherd, Jr., continue as executive secretary and treasurer, respectively.

Whirlpool Grants Distributors 100% Return on Parts

ST. JOSEPH, Mich. — Whirlpool Corp. has put into effect a 100% return privilege for distributors on all refrigeration parts, according to Robert P. Lewis, director of consumer relations.

The new policy pertains to parts for such products as air conditioners, refrigerators, and dehumidifiers.

"A physical check of all refrigeration parts was made by a field force for the purpose of checking the distributors' inventories," it was pointed out.

"Also, orders were taken to insure that parts would be in stock before the refrigeration season begins. The recommended stock to be carried is based on previous sales records during the refrigeration season.

"At the end of the season, distributors will be able to return the parts purchased during this period.

"Through this policy, Whirlpool is assured that the distributors will have parts on hand during the refrigeration season."

Warranty--

(Continued from Page 1, Col. 5)

ture or design during the one-year period, then the full costs of replacement should be borne by the manufacturer.

It was stated that in some instances manufacturers have not spent enough time in the proper designing of equipment being put on the market.

In addition to warranties, topics discussed at the meeting included apprenticeship training, future standardization of training, relationships with wholesalers and manufacturers, and sales to "national" accounts.

The group also heard above Gov. Edmund G. Brown's reorganization which includes making the Contractors State License Board advisory, and putting administration with the director of professional and vocational standards.

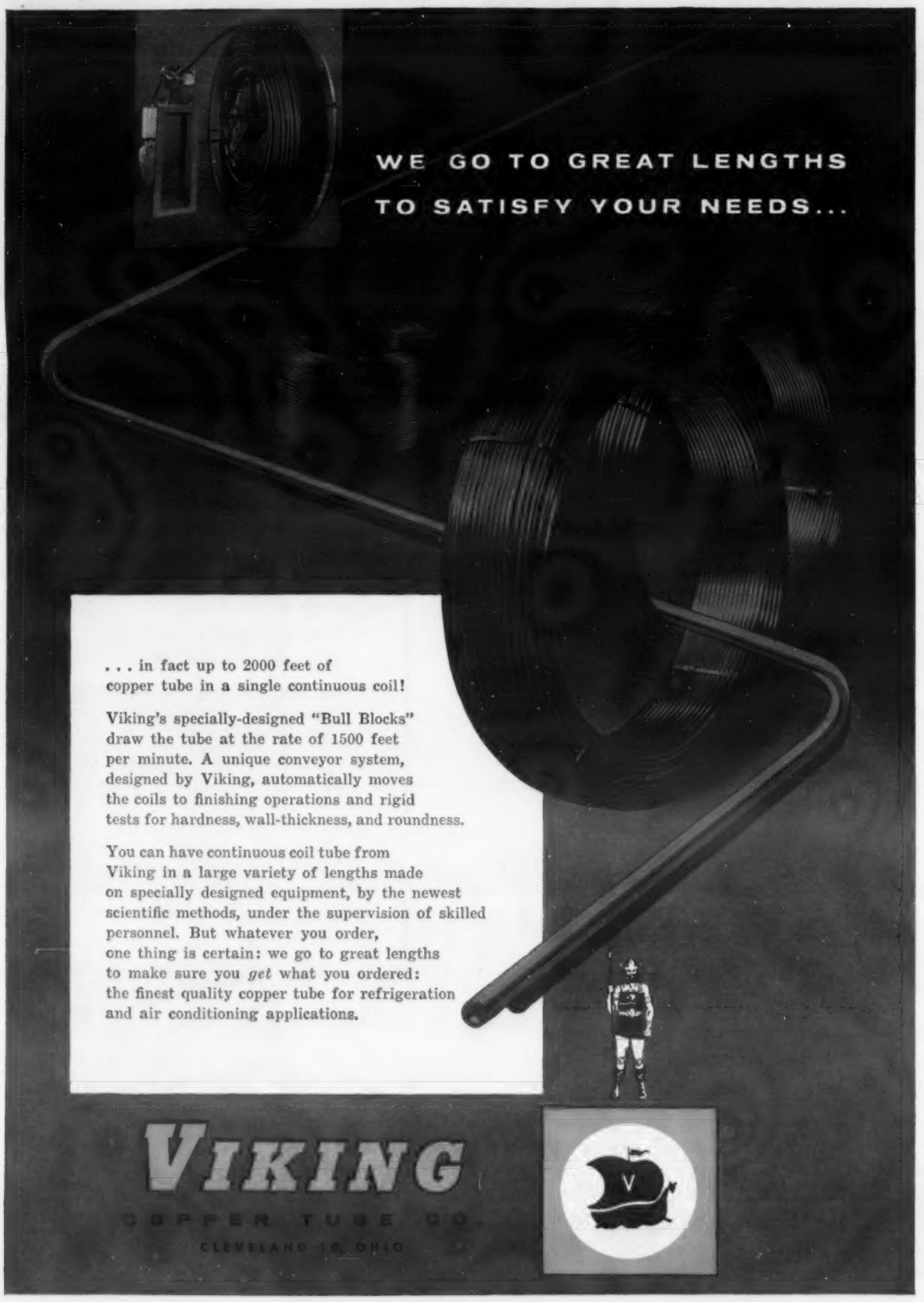
A state-wide legislative committee was appointed. It includes James A. Scatena of San Francisco, William T. Clark of Sacramento, Al Hanson of Los Angeles, and two attorneys who are association executive secretaries: Henry B. Ely of Los Angeles and M. Maroni Smith of San Francisco.

Henry B. Ely was appointed executive secretary of the council.

Five associations were represented: San Francisco, Los Angeles, San Diego, Sacramento, and Inland for San Bernardino and Riverside counties.

The next meeting of the council will be held in Los Angeles, possibly on Sept. 17.

NEWS readers are invited to write to the editor giving their opinions on any subject of interest to the industry.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April Air Conditioning Sales Up In Five of Seven Trade Areas

DETROIT — Air conditioner sales in April were better than in the same month of 1959 in five of seven areas, according to reports from utilities and associations.

The Electrical Association of **Philadelphia** reported that distributor sales of air conditioners in that area soared to 10,422 from 5,408 in April of last year. Sales for the first four months totaled 26,718, compared to 18,438 in the like year-ago period.

The report, which covers sales in five counties, also showed that 904 dehumidifiers were sold in April and 3,048 in the January-April period. No comparative figures were given.

According to the Electrical League of **Cleveland,** room cooler shipments in Cuyahoga County reported by League member distributors for April totaled 864, a gain of 46% compared with the year-earlier figure of 590. For the first four months, shipments zoomed 93% over the like 1959 period, totaling 2,030 against 1,053.

Distributor shipments of central residential air conditioning systems in April were down a bit from the previous April, dropping to 44 from 47. However, shipments for the first four months increased to 147 from 114 last year, a gain of 29%.

Dehumidifier shipments by the Cleveland area distributors in April shot up to 1,493 from only 445 in April, 1959. For the first four months of 1960, shipments aggregated 3,382 compared with 1,184 in the corresponding 1959 period.

In the territory served by Union Electric Co., **St. Louis,** April air conditioner shipments by 10 distributors to their dealers skidded 35% compared with the previous April, the totals being 1,458 against 2,241. Their shipments in the January-April period were off 7%, totaling 4,931 compared to 5,316 a year earlier.

But dehumidifier shipments by seven area distributors rose to 411 in April from 356 in April, 1959. First-four-months' total was 1,145 against 1,065 last year.

A report prepared by Florida Power Corp., **St. Petersburg,** showed that April sales of heat pumps and air conditioners in its area amounted to 1,181, compared with 979 in April last year. Unit sales were also up in the first four months, totaling 2,972 against 2,434 a year ago.

In the **southwestern** section of **Pennsylvania** served by West Penn Power Co., dealers sold 280 room coolers in April, up from the year-earlier total of 168. Their sales in the first four months of 1960 rose to 385 from 293 in the like period of 1959. They also did better on dehumidifier sales, moving 71 in April and 158 in the first four months, compared with 42 and 112 in last year's like periods.

Things were looking up, too, in the **Chattanooga** area. A report compiled by the local Electric Power Board indicated that dealer sales of air conditioning units for home use climbed to 324, including three central units, in April, compared with 277 units (nine of the central type) in the previous April. Domestic heat pump sales totaled 26, against 11. Twenty-six commercial air conditioning units were sold in April, five more than a year earlier.

However, in the territory served by Kansas Gas & Electric Co., **Wichita,** dealer sales of both room and central air conditioners were off sharply from year-ago periods.

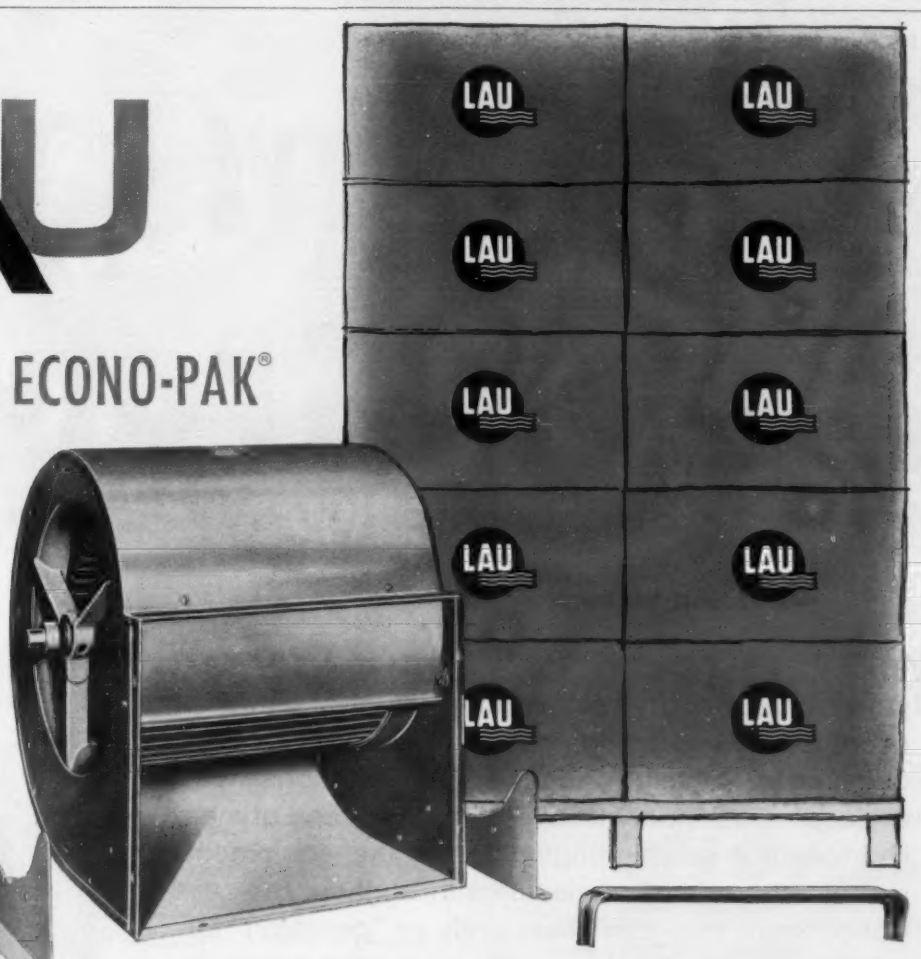
Room cooler sales in that area dropped to 233 in April from 444 in April, 1959, and to 468 for the first four months from 812 in last year's January-April period. Central unit sales skidded to 16 in April from 98, and to 93 in the first four months from 206.

THIS ADVERTISEMENT in the *New York Times* on June 3 caught many an eye. Taking its cue from a customer who bought a room air conditioner to keep his 165-lb. Newfoundland dog comfortable, Friendly Frost stressed the fact that there are a multitude of units on the market to handle a wide variety of needs. "Any room, or house, can be correctly and healthfully air conditioned providing knowledgeable people help you," the advertisement emphasized. "We are specialists in air conditioning and sell the finest equipment to meet any condition. . . ."

LAU

BUDGET® AND ECONO-PAK®

BLOWERS cut inventory costs!



To further reduce assembly time and provide for fast positioning in any of 4 standard angles of discharge the Lau Econo-Pak blower now features Vis-A-Guide locator slots. Ask your Lau Sales Engineer for the complete story on the Vis-A-Guide and how it can benefit your company.

Today more than ever before, original equipment manufacturers are cutting costs wherever possible. A new packaging plan now makes it possible for Lau customers to make substantial reductions in inventory without sacrificing famous Lau quality or dependability.

Because of its extreme flexibility, this new Budget and Econo Pak packaging plan enables Lau customers to order exactly what they need to fill their particular requirements. Through this new plan, you, as a Lau customer, can reduce your inventory, handling and warehousing costs and simplify your production system. Ask your Lau Sales Engineer for a packaging plan that best fits your company's needs.

Both the Budget and Econo-Pak Blower feature strong, Preslock® wheels, ground and burnished shafts, Lau-Pak Gold Seal bearings, three-point close in bearing brackets and cut-off all assembled.

The Lau Blower Company, 2027 Home Avenue, Dayton 7, Ohio.

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LAU — World's Largest manufacturers of Air-Conditioning Blowers for

3 HP *Self-Contained Air Conditioner*

Model PA 30-A

- ★ In 2, 3, 4, and 5 HP
- ★ Available in summer-winter heat pumps
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- ★ Low silhouette for flat-roof work

Write for details today!

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Losey at Wellworth Jackson, Mich.

Maverick Locker Institute Backs AFDOUS Frozen Foods Code

ELIZABETHTOWN, Pa.— The National Institute of Locker & Freezer Provisioners announced that "in the midst of a storm of protests" against the AFDOUS frozen food handling code by many groups representing segments of the frozen food industries, one group (the institute) "has indicated that it is favorably inclined toward the code."

The NILFP in a telegram delivered at the recent AFDOUS convention in Dallas to Carroll Brinfield, chairman of the AFDOUS committee responsible for development of the code, commended Brinfield's group for its work.

In the telegram, Robert L. Madeira, executive director of the NILFP, told Brinfield that his group would like to go on record with the Association of Food and Drug Officials of the United States as disagreeing with the position of other frozen food associations.

Madeira said further that, "on the basis of our present knowledge of the code we believe that the majority of NILFP members will approve it as an important forward step in the frozen food industry."

The NILFP represents an industry of over 9,000 retail frozen food establishments, it was pointed out. These firms process and quick-freeze meats and other foods, and supply frozen foods in bulk quantities for storage in home freezers and lockers.

Controls Co. Makes Michalski Coordinator Of Jobber Activities

MILWAUKEE—In a bid to strengthen its position in the refrigeration jobber trade, Controls Co. of America has appointed Henry Michalski chief coordinator of all of its refrigeration wholesaler activities.

H. Michalski

A. L. Topp, sales vice president of the Heating & Air Conditioning Div., announced the appointment.

Michalski will plan production and inventory for refrigeration jobber products, direct sales promotion, coordinate field sales, and participate in developing division policy.

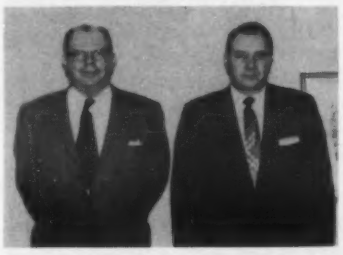
Skuttle Marks Silver Anniversary As Manufacturer of Humidifiers

MILFORD, Mich. — Skuttle Mfg. Co. here is celebrating its 25th anniversary as a manufacturer of humidifiers and filters for warm air furnaces.

John L. Skuttle, a Norwegian immigrant, came to this country in the early 1900's. He designed and built what was said to be the first bonnet-type humidifier known in the U. S. It was a cumbersome unit that weighed 40 lbs.

During the early '20's and early '30's he entered into agreements with two other Michigan firms. These firms would make the units and Skuttle's job was to sell them.

The business prospered and, in 1935, the J. L. Skuttle Co. was formed in Detroit. The company consisted of Skuttle and four partners. Later that year, Russell Geisler, now president of the company, was hired. Geisler remained as the only employe until 1936, when Ken Fournier, now sales manager, was hired as a production worker.



RUSSELL GEISLER (l.) and Ken Fournier were Skuttle Mfg. Co.'s only employes 24 years ago. Today they are president and sales manager respectively.

Shortly after the acquisition of its two new members, the Skuttle Co. moved to larger quarters, a block away from its first Fort St. location. During this period, the first Skuttle model DC and FV humidifiers were made. Later, ceramic evaporator plates were developed and used on the 300 Series and DS units, in attempt to increase the humidifier capacity.

In 1939, Milton A. Powers, then president of the company, developed the idea of using glass fiber in place of the conventional ceramic evaporating plates.

In 1941, Russell Geisler became general manager and Ken Fournier was placed in charge of production, a position he held for 10 years, until his appointment as purchasing agent and assistant to the president.

The year 1953 was one of great changes for The Skuttle Co. Russell Geisler was elected president; the company moved into its new plant in Milford, Mich.; and Ken Fournier became sales manager.

The company's latest product is the new model 900 "Cormaire," an electric humidifier that features a complete humidification system in one compact unit.

Leslie A. Trumble, Trane Ad Manager, Is Dead at 64

LA CROSSE, Wis.—Leslie A. Trumble, advertising manager of The Trane Co. through most of its corporate history, is dead. He was 64.

Trumble was hired by Reuben N. Trane in 1922, seven years after the company was founded, and became advertising manager shortly after joining the firm. Through his work he helped make Trane an internationally known concern. In his early years with Trane, Trumble authored a number of technical articles on air conditioning.

His chief outside interest was electricity and radio. One of his last projects was an ingenious new type of tape editing machine for recorded tape.

In the busy summer months ahead...

INSIST ON genetron®

SUPER-DRY REFRIGERANTS

...and be sure of the best!

genetron super-dry refrigerants are universally accepted for use as original or replacement charge because their tight production standards consistently exceed industry specifications for purity and dryness. Refrigeration service engineers, original equipment manufacturers and wholesalers throughout the nation know they can always rely on "genetron" for dependable, trouble-free performance. "Genetron" super-dry refrigerants are available from wholesalers everywhere. Their high quality is backed up by fast, dependable service—including prompt return of deposits on empty cylinders—and extensive technical help. More than a million copies of the "genetron service tip of the month" are mailed out every year. Pressure-enthalpy charts are available for refrigeration service engineers to use in their work. Special sound slide films on solving refrigeration and air-conditioning problems are shown regularly to original equipment manufacturers, servicemen, contractors, trade schools and universities. Whenever you order modern refrigerants, remember the name—"genetron"! Do as so many others are doing. Use the very best! When you see your wholesaler, always insist on "genetron" super-dry refrigerants!

genetron 11 ORANGE LABEL CCl_3F
TRICHLOROMONOFLUOROMETHANE

genetron 12 WHITE LABEL CCl_2F_2
DICHLORODIFLUOROMETHANE

genetron 22 GREEN LABEL $CHClF_2$
MONOCHLORODIFLUOROMETHANE

genetron 113 PURPLE LABEL $C_2Cl_3F_3$
TRICHLOROTRIFLUOROETHANE

genetron 114 BLUE LABEL $C_2Cl_2F_4$
DICHLOROTETRAFLUOROETHANE

Allied Chemical

GENERAL CHEMICAL DIVISION
40 Rector Street, New York 6, N.Y.

1 Tripled supply of oil, now standard on all models. Gives added assurance of long, maintenance-free life.

2 Improved bearing system means same motor rating can do a bigger job, or same job with longer life.

3 New integral insulation system improves motor life and dependability; reduces noise.

4 New punching design results in up to 20 percent higher operating efficiencies.

5 Alkanex* insulation on wire provides superior resistance to heat aging, giving longer life.

6 Multi-function Surge Test adds new levels of quality control to assure design excellence is retained through the manufacturing process.

*Registered Trademark of General Electric Co.

The inside story of . . .

SIX ADDED VALUES IN NEW GENERAL ELECTRIC FAN MOTOR

Now you get that extra measure of dependability with General Electric 51-frame, unit-bearing shaded-pole fan motors. And you get it without a change in the familiar, functional exterior. Four-pole, totally enclosed ratings are: 1.5 to 16 watts, 60/50 cycles, 115 and 230 volts, single phase.

Six significant motor improvements sum up to added value in your products:

1. TRIPLED OIL SUPPLY. Now a standard feature—formerly popular as an extra—is the tripled oil supply for greatly extended life. Improved oil formula gives greater lubrication life over a wider temperature range.

2. IMPROVED BEARING SYSTEM. A sleeve bearing with superior finish and high load-carrying capacities is now used on General Electric fan motors. The same motor rating can now drive a heavier fan or drive the same-size fan with longer life.

3. INTEGRAL INSULATION. A new concept in stator insulation—integral insulation—provides significant improvements in insulation life, moisture resistance, and quietness of motor operation. The stator core is bonded with special high-dielectric-strength resin. This gives integral insulation a tested life expectancy many times that of conventional paper-slot insulation.

4. INCREASED EFFICIENCY. A new punching design results in up to 20% increase in operating efficiency, thus lower current drain, less watts input for the same job.

5. SUPERIOR ALKANEX INSULATION ON WIRE. Another component of the General Electric motor insulation system is Alkanex insulation on the wire. Superior resistance to heat aging means 14 times greater life expectancy than previous insulation.

6. NEW MULTI-FUNCTION SURGE TEST. Every General Electric fan motor is thoroughly tested before, during, and after assembly. And now a new multi-function surge test checks for insulation grounds, shorts, opens, resistance, continuity, and reversed polarity.

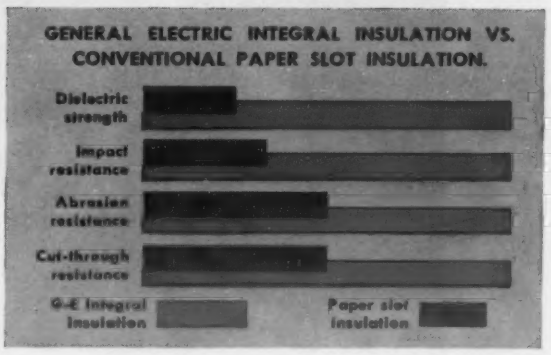
The improved General Electric fan motor is designed for applications demanding a long-life motor operating for its entire life without maintenance of any kind. This motor is best suited to power condenser and evaporator fans on food and beverage coolers, vending machines, walk-in coolers, condensing units, frozen food and ice cream display cases, and domestic freezers and refrigerators.

DON'T FORGET THESE BASIC BENEFITS

In addition to the new "added values," remember these basic benefits you receive with General Electric 51-frame motors:

1. FAN BLADE HUB IS PART OF THE MOTOR
2. EASY INSTALLATION OF FAN BLADE
3. ALL MOTORS TESTED BEFORE SHIPMENT
4. COMPLETE LINE OF ACCESSORIES
5. RELIABLE DELIVERY
6. APPLICATION ASSISTANCE
7. NATION-WIDE LOCAL SERVICE

Ask your General Electric Sales Engineer for more information on the improved fan motor and how it can be applied to your refrigeration products. Or fill in coupon.



Superior on four important counts—that's the General Electric integral insulation system. Compared to conventional paper slot insulation, integral insulation has: four times the dielectric strength; three times the impact resistance; twice the abrasion resistance; and twice the cut-through resistance. And, unlike paper slot insulation, it is completely impervious to humidity.

To: General Electric Co., Section A632-17, Schenectady 5, New York.

Please send me complete data on 51-frame shaded-pole fan motors.

NAME_____

TITLE_____

FIRM _____

ADDRESS_____

CITY _____ STATE _____

Progress Is Our Most Important Product

GENERAL ELECTRIC

Form Fresno Group To Develop Training Program for Apprentices, Journeymen

FRESNO, Calif. — Interested in developing a training program for refrigeration journeymen and apprentices, a Refrigeration & Air Conditioning Contractors group has been formed here as a sub-division of the local Mechanical Contractors Association.

Formation of the new Fresno group was encouraged by the successful RACCA training program in Los Angeles, which has been adopted by San Francisco, and is undergoing discussion in Sacramento.

After a meeting with Henry B. Ely of Los Angeles, western representative of RACCA national, the following refrigeration and air conditioning contractors became national members of RACCA:

Sam Alexander Refrigeration; Bell & Hughes, Inc.; Conditioned Air; Crowley-Hill Co.; Donald J. Dick, Inc., Air Conditioning Div.; and New England Sheet Metal Works, Inc.

Nat Leas of Conditioned Air is president of the new group. Charles G. Bell of Bell & Hughes is secretary-treasurer. Corresponding secretary of the new group is Paul Reeves, executive secretary of the local MCA.

This new group is the sixth RACCA chapter in California. Others include Inland RACCA, RACCA of Northern California, RACCA of San Diego, RACCA of Sacramento, and RACCA of Southern California.

Regarding Promotional Allowances

Guide Gives Laymen Understanding Of Robinson-Patman Amendment

WASHINGTON, D. C. — To encourage wider understanding by businessmen of the laws prohibiting the granting and receiving of legal promotional allowances for advertising and special services, the Federal Trade Commission has issued a 16-point guide on Sections 2(d) and 2(e) of the Robinson-Patman amendment to the Clayton Act.

The commission emphasized that these staff guides are being made public for the sole purpose of educating businessmen and the public as to the requirements of the law. At the same time, the Commission reiterated its purpose to continue vigorous enforcement of the law by every means at its command.

Commissioner Edward T. Tait pointed out that the guides are couched in layman's language in order to reach as wide a readership among businessmen as possible. He also observed that a common excuse for noncompliance with the provisions of Sections 2(d) and 2(e) has been that their prohibitions are too complex for the non-lawyer to understand.

"The guides should go far toward nullifying this excuse," he said. "They should be of great assistance to merchants and particularly to small businessmen, in making them more aware of their obligations and enabling them to recognize illegal methods when they are used by their competitors."

In order to make very clear that the commission intends to continue its present enforcement policy, the following language was incorporated as a part of the guides:

"Nothing contained in these guides relieves any party subject to a commission cease and desist order or other requirement from complying with the specific provisions of such order or requirement. The guides do not constitute a finding in and will not affect the disposition of any formal or informal matter now pending with the commission."

Printed with the guides is a complete text of the Robinson-Patman Amendment to the Clayton Act.

One of the points made in the guide is that all competing customers must be notified and given a clear understanding of promotional plans extended to any one of them.

Another is that a promotional program must allow all types of competing customers to participate; it must not be tailored to satisfy the needs of a favored customer or class.

Some other points: Special allowances can't be offered to a customer because of his special reputations; a promotion may be limited geographically, just so it covers all the customers who compete in the area.

FTC Directs Attention To Direct Mail

WASHINGTON, D. C.—The Federal Trade Commission's Bureau of Investigation called upon all FTC staff members to assist in a continuing check of direct mail advertising that they receive at their homes or which is brought to their attention.

Sherman R. Hill, Investigation Bureau director, based his request on the fact that in the FTC's policing of false and misleading advertising "there is one form of advertising which is not adequately reviewed—direct mail solicitation."

"It is desired that this loophole be plugged," he said in a memorandum addressed to all employes.

Cool Cooking Promotion To Plug Conditioners

NASHVILLE, Tenn. — Nashville Electric Service will promote the sale of electric ranges with a tie-in of air conditioning June 20 through Aug. 20.

Theme of the promotion will be, "For Cool Cooking, Be Sure It's Electric." The promotion will be conducted through newspaper ads, bill stuffers, bill boards and bus cards, radio, and window and floor displays.

Sell Climate by Chrysler

Dealers who sell Chrysler Air Conditioning . . .

don't shave profits!

It takes sharp dealing to move low-grade merchandise. For, more often than not, profits have to be shaved. And at times, the razor gets too close for comfort. What a relief to throw it away and just let profits grow day after day! You can . . . when you sell Chrysler Air Conditioning.

With Chrysler, you go for a good profit and get it. You're no longer concerned with "fancy deals" because prospects (and there are lots of 'em) expect to pay a fair price for Chrysler quality. They respect the name that means engineering superiority.

Now, we're not saying, "All you have to do is hang out your Chrysler Airtemp sign and retire with your bags of gold." We both know better. But if you are working for bigger volume, a better return, Chrysler will give you full reward for your efforts. Want 9 other reasons for going Chrysler?

Send for booklet, "It will pay you to take a long look ahead . . . with Chrysler Airtemp." Or call your Chrysler Distributor.

CHRYSLER AIRTEMP

Airtemp Division, Chrysler Corporation, Dept. H-60, Dayton 1, Ohio

Please rush me a copy of the "Long Look" Booklet

NAME_____ TITLE_____

COMPANY_____

ADDRESS_____ COUNTY_____

CITY_____ ZONE____ STATE_____

Redmond TYPE AO

FRACTIONAL HORSEPOWER ELECTRIC MOTORS

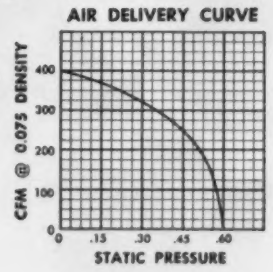
LOW COST HIGH POWER SMALL DIAMETER

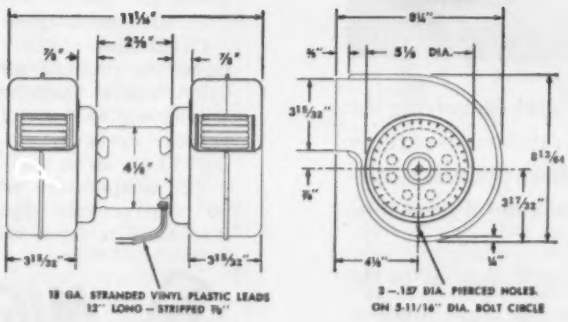
It will pay you to investigate this small diameter, quality motor that combines low cost with whisper-quiet, dependable, all-angle operation. It has high performance characteristics that were formerly available only in larger diameter motors.

The Type AO MicroMotor is designed in every way to be ideal for a multitude of applications in the heating, air conditioning, ventilating, refrigeration, and appliance industries. Companion single or double blowers deliver up to 800 CFM.

Redmond Sales Engineers are skilled technicians who want to work with you to adapt the Type AO to your motor needs. Call either the Redmond office nearest you, or the home office, and a Redmond engineer will call on you.

BLOWERS DELIVER UP TO 800 CFM





FREE AIR DELIVERY PERFORMANCE
115 V • 60 Cycle •
4 Pole • 1550 RPM
(2) 5¼ x 2¾ Blower Wheels
2.0 Amps • 150 Watts •
33.5% Eff.

Your Nearest Redmond Engineering Field Office Has Complete Information for You

MAIN OFFICE
201 Monroe Street
Owosso, Michigan
Phone: Saratoga 5-5151

Southeast Office
1720 Section Road
Cincinnati 37, Ohio
Phone: Melrose 1-3153

Mid-West Office
Fair Oaks Bldg.
6525 W. North Ave.
Oak Park, Illinois
Phone: Village 8-5721

Southwest Office
210 Dyer Building
5531 Dyer Street
Dallas 6, Texas
Phone: Emerson 8-4461

Eastern Office
850 Broad Street
Newark 5, New Jersey
Phone: Mitchell 2-3990

Western Office
139 Illinois Street
El Segundo, California
Phone: Oregon 8-3867

NEW CATALOG — New 12-page catalog describes and illustrates basic line of Redmond fractional horsepower electric motors, blowers, and special products. Send request for your free copy to Redmond Company, Inc., Owosso, Michigan.

The Standard of Dependability

Redmond COMPANY, INC.

Subsidiary of **CONTROLS COMPANY OF AMERICA**

OWOSSO, MICHIGAN

THE **BIG** NAME IN SMALL MOTORS

Even Slight Production Increase Pays for Factory Air Conditioning

NEW YORK CITY — More factory workers will be toiling in air conditioned comfort when management finds production increases will more than pay for cooling.

So declared Carl W. Millsom, vice president, Perfection Div., Hupp Corp., in addressing 100 executives of 29 eastern utilities at the Interstate Power club meeting here.

In advising the utility executives how to promote air conditioning in factories, Millsom stressed selling the economic benefits and how small an increase in worker efficiency pays for cooling.

"Owners must be able to realize a return on investment in cooling. No matter how important the comfort benefits are in employe relations, the chief justification must be increased production through improved efficiency," he said.

Though studies by government agencies and independent engineers point to production increases of 22 to 28% in general manufacturing, these claims may seem "too good to be true to cautious management."

Even 3% Pays Off

"Huge claims, even though valid, may hurt more than help, particularly when it takes a production increase of only 1½ to 3% to justify air conditioning," Millsom cautioned. In the average plant air conditioned with packaged units, costs are only $1 per square foot.

The Federal government's General Services Administration, landlord for all government buildings, found that if worker output increased only 1½% in hot weather, air conditioning would pay for itself in savings in salaries alone. Actually GSA found production went up a minimum of 9½%, he pointed out.

Not all plants or all areas in all plants can be cooled economically, Millsom indicated. As a guide, he suggested that the factory owner should not spend more than one-fourth of the total gross annual wages of the workers in the area on air conditioning.

Where high temperature sources are present or few workers, this rule would indicate the cooling would not pay. However, spot cooling in rest areas such as near blast furnaces in steel mills provide some comfort for workers in these conditions, he noted.

Prime reason that air conditioning is proving more popular in factory buildings is the development of larger package units that are more economically installed, Millsom said. Air-cooled package units up to 75 tons are now available while only a few years ago air-cooled units were limited to small 1 to 3-hp. sizes.

With growth in packaged equipment every job need not be a special problem for the few top engineers, he stated. Properly trained personnel under their guidance can handle a majority of applications, he said.

Strides made in equipment development mean installations can be made at lower cost, Millsom said. In many instances air conditioning could not economically be installed previously due to the plant's size, lack of water for cooling, or the complexity of built-up systems that required a full time stationary engineer on the job.

One of the first things management wants to know, he stated, is what type of equipment is best for the plant. The complete built-up system has its place where exact temperatures and humidities and special filtration are required. "But these conditions are the exceptional," Millsom said, "not the normal."

In his experience, he said, the engineer who can recommend any type of system will normally specify packaged units after a thorough survey. Millsom claimed packaged units offer:

"1. Lowest capital investment.

"2. Greatest flexibility: can be moved to fit production changes.

"3. May be used only where needed and economic.

"4. Easier to install.

"5. Service and maintenance is simpler.

"6. Parts are readily and quickly available.

"7. Greater salvage value if the plant is closed: money isn't tied up in ducts and piping.

"8. Package plans, easier to buy: easier through cash, bank loan, or leasing.

"In addition, the advent of packaged heat pumps offers management even greater economies since in winter heat pumps may use otherwise waste heat from plant processes to heat the building."

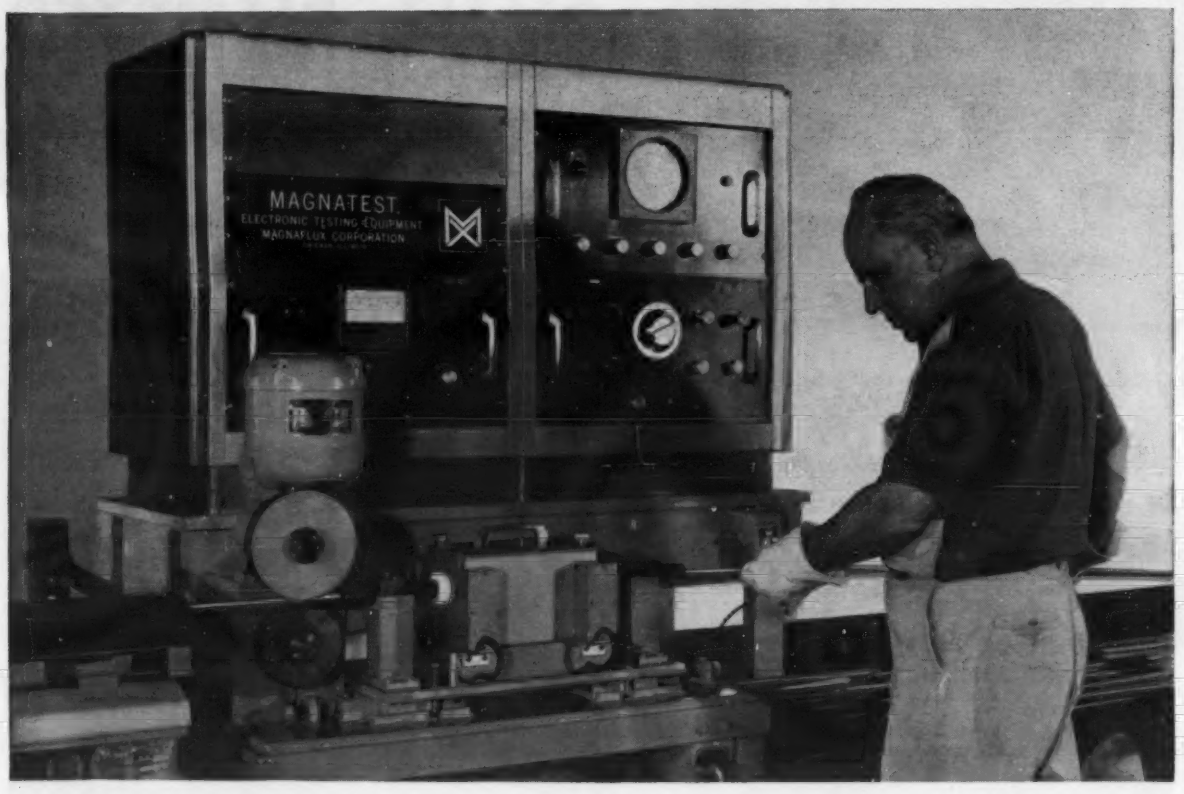
Ways To Economize

The engineer must be careful to discuss with the owner exactly what is needed and expected. He should, Millsom pointed out, advise not to cool areas when it won't pay a return, such as storage areas where few people work.

He also made these points:

Conditions should be maintained to produce an economically sound installation. The aim should be for the practical, not the optimum air conditioning. There is no need to design a 72° temperature when 75 or 80° can provide top efficiency. Nor need relative humidity be

Why eddy-current testing gives you consistent soundness in Anaconda thin-wall tube



Many years of experience with eddy-current testing have enabled Anaconda to develop meaningful inspection standards

Through its long association with the air conditioning and refrigeration industry, Anaconda knows the importance of top quality in thin-wall copper tube. From billet to finished tube, quality-conscious practices control production. Critical and realistic standards govern inspections.

Eddy-current testing is one of the important reasons why Anaconda thin-wall copper tube consistently meets the industry's rigid quality requirements. Anaconda pioneered in developing the application of this valuable tool to the inspection of copper tube, during 10 years of research on electronic testing.

This extensive development work—involving the hydrostatic expansion of literally thousands of tubes—has enabled Anaconda to establish practical eddy-current inspection levels for meaningful inspection standards.

Tubes that do not meet these standards in the eddy-current test are *automatically* segregated—so that there is no chance for human error.

Quality tube and creative technical services. Whether you need hard or soft thin-wall copper tube, capillary or restrictor tube, or bulb and tube assemblies, Anaconda has the experience and facilities to produce the quality tube you require for economical manufacture. For further information or technical assistance, write: French Small Tube Division, The American Brass Company, Box 1031, Waterbury, Connecticut.

ANACONDA® **COPPER TUBE** *for Refrigeration and Air Conditioning*
Made by The American Brass Company

MIGHTY MITE

***Makes Motor* DRIVEN APPLIANCES SAFE!**

MIGHTY MITE MOTOR PROTECTORS

MECHANICAL INDUSTRIES PRODUCTION CO.
223 Ash Street Akron, Ohio

held at 50% when 60 will be adequate.

Other economies can be made, for example, in high ceiling plants by not figuring the whole 20 to 30-ft. high area needs be cooled. The conditioned air can be delivered at a height of 8 ft. and the designer can figure the space being cooled has a ceiling at 12 ft. since cool air does not rise.

Ventilation, Isolation of High-Heat Areas Helps

Costs can be cut if high temperature sources such as furnaces or other machinery are provided with proper ventilation or isolated by partitioning. It is important to check the actual operating time for machinery. It is unnecessary to figure a 50-hp. load for a 50-hp. machine that only operates 10% of the time, Millsom pointed out.

"Throw in a factor of safety and figure it as a 15-hp. load," he recommended.

Real Returns Higher

"Our figures are based on the minimum increase needed in worker efficiency to make industrial air conditioning sound economics. The real dollar and cents return are well above this," Millsom emphasized.

Government reports show an 80% drop in maintenance costs in a nylon hosiery plant, a 25% drop in absenteeism in 75 plants surveyed, a 25% drop in reworked parts in a watch manufacturing plant, a 50% increase in drafting room output at a large utility.

"Manufacturing people know how much air conditioning has increased sales in all types of mercantile establishments, has saved and increased attendance at theaters. A great many of them have air conditioned their offices and enjoyed the benefits. Now they can reap even greater benefits in their manufacturing areas," he concluded.

To Discuss Industrial Building Dec. 12-15

NEW YORK CITY — A conference on construction of new industrial buildings and modernization of old ones will take place here Dec. 12 through 15, it was announced recently.

The conference will be a feature of the first Industrial Building Exposition & Congress at the New York Coliseum. Both events are being produced by Clapp & Poliak, Inc., New York exposition management firm, and are under the sponsorship of a board composed of 28 of the nation's foremost architects, builders, engineers, and industrial executives, according to the announcement.

"Nineteen basic topics dealing with virtually every major aspect of new construction and modernization are scheduled," it was stated.

Exhibits will fall into eight major categories, including heating and air conditioning equipment.

Visitors who plan to attend may obtain information about hotel reservation, conference attendance, and rapid registration cards for the show by writing Clapp & Poliak, Inc., 341 Madison Ave., New York 17, N. Y.

Black & Decker Air Conditions Towson Plant for Employe Comfort

TOWSON, Md. — Black & Decker Mfg. Co. announced that it has awarded to the Austin Co. of Cleveland a contract for the installation of 776 tons of air conditioning equipment in its electric tool manufacturing plant at Towson.

Total cost of the installation will be approximately $720,000, including a building addition to house the equipment.

"The installation at the Black & Decker Towson plant will have two unusual features," the company said. "First, it involves the air conditioning of a large manufacturing area — about 180,000 sq. ft.—primarily for the benefit of employes.

"Many manufacturing areas are air conditioned to control and improve product quality, but few, especially in the Baltimore area, have made such a factory installation to provide employe comfort.

"Black & Decker's newest 480,000-sq. ft. plant at Hampstead, Md. was one of the first large plants to be air conditioned specifically to improve working conditions for employes.

"The other unusual feature of the Towson plant installation is that the centrifugal refrigeration machine will be driven by a natural gas internal combustion engine capable of developing 915 hp. at 1,100 r.p.m.

"The Austin Co. recommended the use of the gas engine, instead of the conventional electric motor, on the basis of a special gas rate schedule from the Baltimore Gas & Electric Co.

"The special rate is offered in an effort to increase the summer-time consumption of natural gas and air conditioning is a 'load-builder' for this purpose.

"Austin Co. engineers figure that the use of natural gas will accomplish savings of about $2,600 per year as compared to electricity for this installation."

Small Plant Buys It

FULTON, Miss.—At a cost of approximately $100,000, Itawamba Mfg. Co. of Fulton will build a new 20,000-sq. ft. plant at Tremont, Miss., seven miles from here. Scheduled to begin production by July 1, the new plant will be completely air conditioned.

Cool Shirt Factory

SPARTANBURG, S. C.—At a cost of around $200,000, Raycord, Inc., is constructing an air conditioned addition to its shirt manufacturing plant here, it was announced by R. P. Carson, an official of the firm.

To Air Condition Delco Kokomo Plant

KOKOMO, Ind. — Air conditioning, humidity control, and electrostatic air filtering will be among features of the new engineering building to be erected for Delco Radio Div.

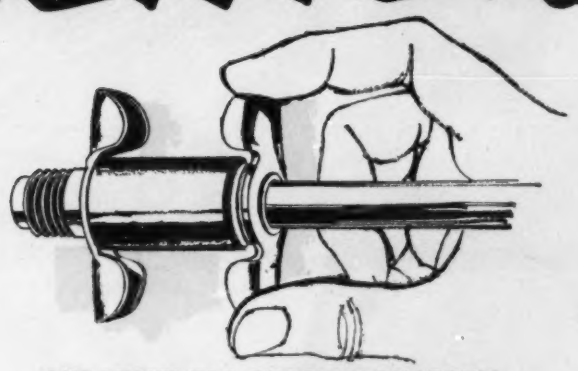
The ultra-modern two-story structure will cover 125,000 sq. ft. It will house some 300 engineering personnel in the research and development of semiconductors and in radio and electronic engineering.

IMPERIAL REFRIGERATION SERVICE

IDEA CENTER

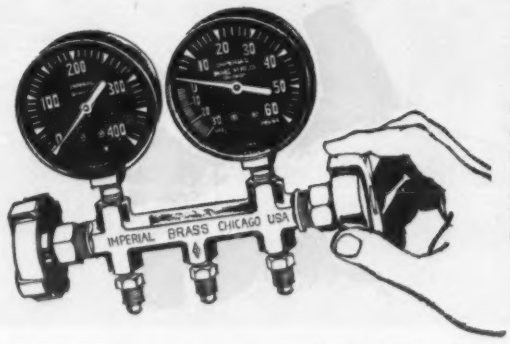
SAVE ON EXPENSIVE REFRIGERANT

Here's a can-piercing, reusable dispensing valve that lets you use only the amount of package refrigerant you need for a job *without losing the rest of the can.* And you save the valve, use it over and over. No. 330-C Tap-A-Can refrigerant dispensing valve — $1.45.



SHORTCUT FOR PURGING, CHARGING AND TESTING HERMETIC SYSTEMS

Slip this handy Imperial KWIK-CONNECT charging and testing port over the pinch-off tube of a hermetic unit, and tighten the wing-nut until the synthetic rubber seal grips the outside of the tube. Just as easy as that, you have a male flare connection to the system. No. 241-F KWIK-CONNECT; specify tube O.D. of 3/16, ¼, 5/16, ⅜ — $1.50 to $1.90, depending on size.

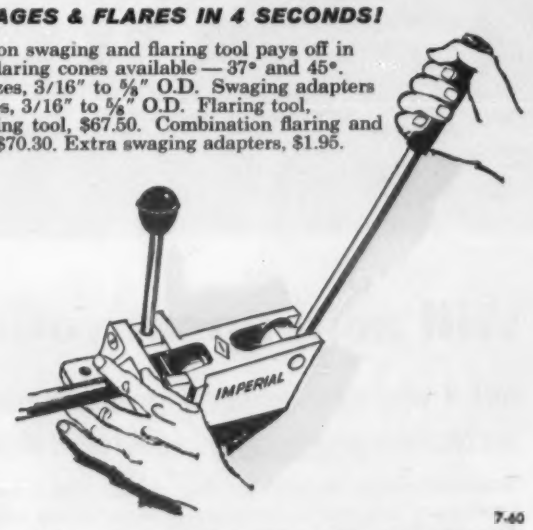


LIGHTER, STRONGER, EASIER TO HANDLE

No scraped knuckles on this double gauge charging and testing unit. Big hand grips, plenty of hand clearance. Light-weight, high-strength, forged brass body. Big, easy-to-read 2½" dials — pressure gauge to 400 lbs., compound gauge from 30" vacuum to 150 lbs.; handles higher pressures of Freon 22. No. 356-C.....$8.55

MAKE SWAGES & FLARES IN 4 SECONDS!

This production swaging and flaring tool pays off in time saved. Flaring cones available — 37° and 45°. Flares in 6 sizes, 3/16" to ⅝" O.D. Swaging adapters come in 6 sizes, 3/16" to ⅝" O.D. Flaring tool, $62.50. Swaging tool, $67.50. Combination flaring and swaging tool, $70.30. Extra swaging adapters, $1.95.



WIN!

$5.00 CASH AWARD

Send us your ideas, tips, short-cuts using Imperial refrigeration products — anything that makes your job easier. Every idea we use wins $5.

IMPERIAL

7-60

THE IMPERIAL BRASS MANUFACTURING COMPANY
6300 West Howard Street, Dept. ACHR-60, Chicago 48, Ill.

Gentlemen:
Send me additional information on the following products:

☐ Charging and Testing Unit
☐ Tap-A-Can Dispensing Valve
☐ Kwik-Connect Charging and Testing Port
☐ Production Swaging and Flaring Tool

NAME.....
COMPANY.....
ADDRESS.....
CITY.....STATE.....

Inside Dope

By GEORGE F. TAUBENECK

(Continued from Page 1)

however, was his most famous and useful contribution.

Much to Cooper's surprise, he later read in an old book about rockets that a weapon operating on the same principle as the bazooka was developed by the French in the 17th century.

Modern-Day Edison

In addition to his wartime accomplishments, Cooper has made important contributions over a 30-year period to the improvement of numerous electrical and mechanical devices in common use today.

He isn't certain exactly how many inventions he has claimed. Prior to joining Amana in 1947, he had taken out nine refrigeration patents.

Since then he has patented three concomitant inventions, and several others are pending.

"Their number might have been higher," he says, "but frankly, I've been so busy with other things I haven't taken time to write up some of my inventions for patent application."

Cooper recalls that when he visited Amana for the first time, after being asked to consider the post of chief engineer for this refrigeration and air conditioning factory, he noticed that "everyone was working. That's something you don't find everywhere, and the people seemed like a pretty conservative type."

In earlier days, Cooper was a pretty fair boxer. While a student at Pennsylvania State university, he was on its first intercollegiate boxing team, and represented his school in every collegiate meet during his last three years.

Good News

Abilities Inc., an upstate New York company run by and for the disabled, is becoming an increasingly important General Electric sub-contractor.

It was formed originally by four men who altogether were able to muster one leg and five arms. Today it boasts over 170 crippled employes, more than 90% of whom have not previously worked following their disability. About one-fourth of them are war veterans.

Henry Viscardi (who was born without legs) heads this company which he founded.

In one year alone this small Long Island concern has won several General Electric contracts. Largest among these is a compact with G-E Home Heating & Cooling Department. Abilities, Inc. winds electrical coils which regulate special valves within the boiler, brazes the heating coils through which water circulates inside the boiler, and sews canvas connectors that help to make the boiler run quietly.

In each contract that G-E has made with this industries outfit the latter has competed against other vendors and has earned its spurs by submitting low bids for quality work. Delivery schedules are on the nose.

Harold Sargent, manager of General Electric's Bridgeport division, affirms that, besides doing quality work at favorable costs, Abilities, Inc. has come up with several ideas which have saved money and advanced production.

One example is its unique device to test heating coils (formerly a test cycle required 16 minutes; it now takes only 45 seconds).

Bully!

Let's Get Down to Business

This slogan is framed in the sales-conference room of a G-M division:

THINK: and you'll do twice the business . . . in half the time . . . with a third less calls . . . in one-half the territory. . . .

Heart-lines

A Broadway actor conducted his two urchin daughters through St. Patrick's Cathedral in New York City.

There, he explained (in whispers) the meaning of the main and side altars, the statues of the saints, and the lighted votive candles. On the way out, he heard a racket behind him.

Turning around, he was just in time to see daughter Romina gaily blowing out candles and singing at the top of her lungs:

"Happyee birthday to you-oo!"

In the central place of every heart there is a recording chamber; so long as it receives messages of beauty, hope, cheer and courage, so long are you young. When the wires are all down and your heart is covered with the snows of pessimism and the ice of cynicism, then, and then only are you grown old.—DOUGLAS MACARTHUR.

Love is ever the beginning of Knowledge, as fire is of light.—THOMAS CARLYLE.

The disposition of mankind, whether as rulers or as fellow-citizens, to impose their own opinions and inclinations as a rule of conduct on others is so energetically supported by some of the best and by some of the worst feelings incident to human nature that it is hardly ever kept under restraint by anything but want of power; and as the power is not declining, but growing, unless a strong barrier of moral conviction can be raised against the mischief, we must expect, in the present circumstances of the world, to see it increase.—JOHN STUART MILL, in his essay "On Liberty."

Excellent Alibis

How a secretary should protect her boss over the telephone (these instructions swiped from an advertising agency in New York):

"He should get here any minute.

"He will be tied up with the boss for awhile.

"He was here, but had to leave right away.

"He has gone to lunch.

"He is in conference.

"He hasn't come back yet.

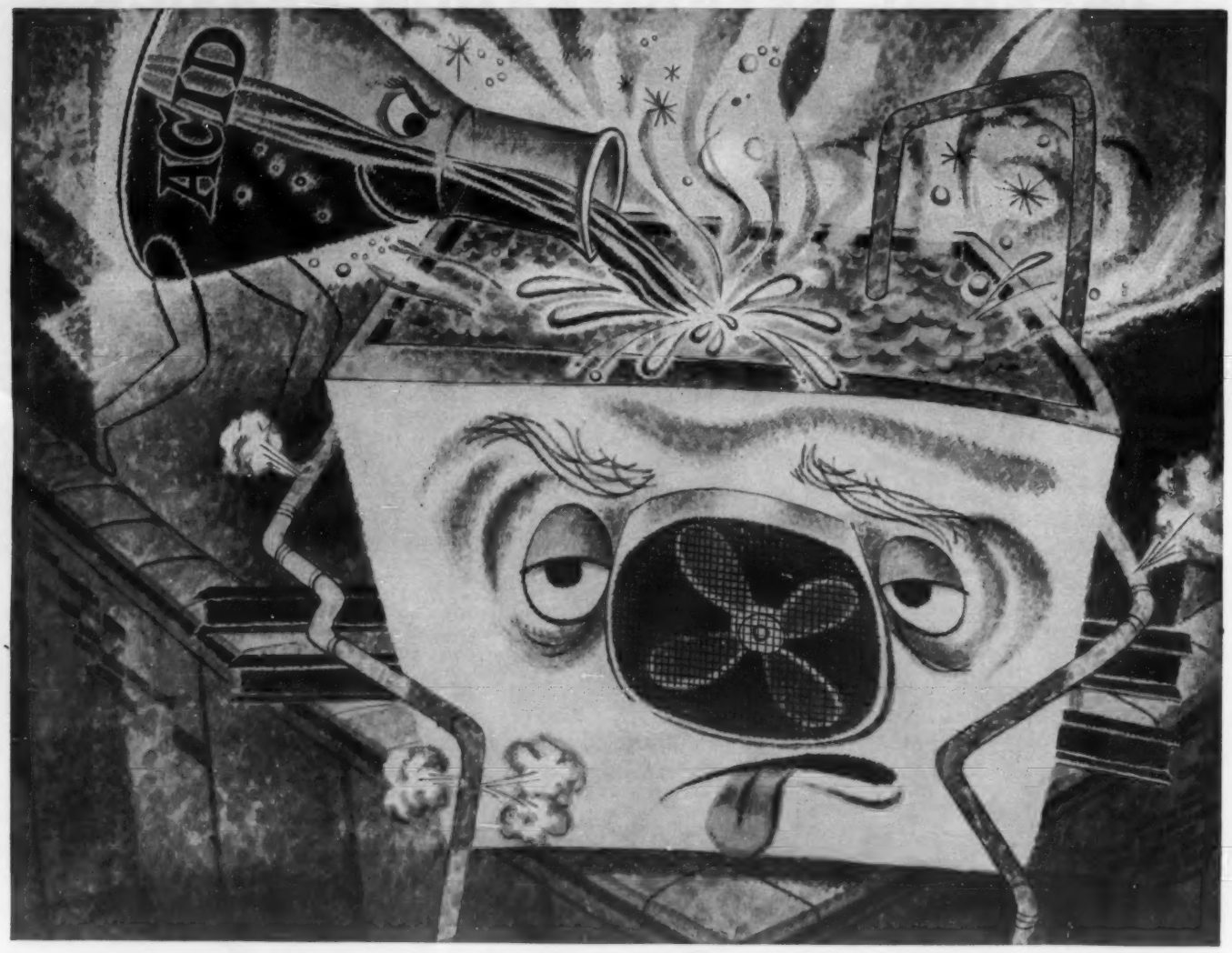
"He is out of town.

"He is somewhere in the building, but I can't reach him.

"His hat is here, so keep trying, fella.

"Yes, he was here but he had to leave on an emergency.

"I doubt if he'll be back again today. His wife is here in a high dudgeon."



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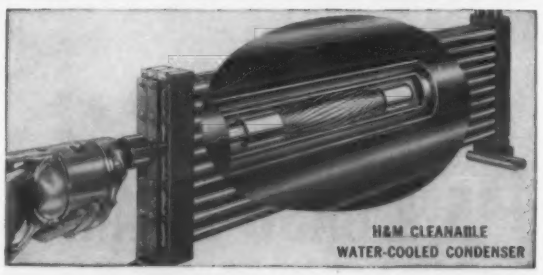

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DU PONT ANNOUNCES...

New "Zephyr" Containers for "Freon" Designed for Your Convenience

- Built-in carrying handle
- Can be used upright or inverted
- Can be stacked
- New handwheel valve
- Lighter in weight
- New 50 lb. size

These new "Zephyr" containers can be used either upright or inverted without special blocks or stands. A permanent collar protects the valve and serves as a built-in carrying handle. These are the only refrigerant containers that can be stacked one on top of the other. They are shorter—lighter—easier to carry. A 50 lb. size is now practical. No wrenches are needed because these new containers also have a new type handwheel valve. They will stand upright in your truck.

"Freon-12" and "Freon-22"—the premium quality refrigerants—are now available in these new "Zephyr" containers in 25 and 50 lb. sizes from your *leading* air conditioning and refrigeration wholesalers. Place your order for "Zephyr" containers today.

Please turn page for another announcement

NEW TOP *and* VALVE

are being added for your convenience to Standard 25 lb. cylinders for "Freon"

This new "Spintop" cylinder is now available in addition to the Standard 25 lb. cylinder with hood cap. The "Spintop" is a convenient carrying handle, valve protector and stand. Being free to rotate, it provides easy access to the valve. The regular valve has been replaced with a convenient handwheel type that includes a special spring-loaded pressure relief device for added safety.

Now—a Container for Every Use

For your convenience "Freon" refrigerants are offered in a family of containers*. Each of these types of containers has its own distinctive advantages. The container that best suits your needs is available from your leading air conditioning and refrigeration wholesaler. Call him today for your order of "Freon" refrigerants.

**1 or 2 lb. "Can-O-Gas" containers of "Freon" refrigerants are available from the Virginia Smelting Co., our nationwide sales agent and authorized repackager.*

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Modernization of Commercial Oil Burners Both Profitable and Essential, OHI Told

NEW YORK CITY—There is a vast market in modernizing and upgrading existing commercial and industrial oil-burning systems, and there's likewise the threat that if these systems aren't improved, they'll be converted to gas.

Such was the theme of a panel discussion held by the Commercial-Industrial Associates during the 38th annual convention of the Oil-Heat Institute here.

WHAT MODERNIZATION CAN INCLUDE

Modernization programs can include such things as improved safety controls, conversion from manual to automatic operation, changing systems so they can use the cheaper No. 4 oil instead of No. 2, and similar improvements, it was brought out by three speakers: Robert Beningson, Joseph Ross, and Frank Wymbs, Jr.

Pointing out that "there is more emphasis on safety today," Beningson cautioned against trying to sell safety controls on the basis of fuel savings.

Improved operating controls can provide economy and can be sold on this basis, he said, but safety controls should be sold only on the basis of safety.

First big saving possible in changing from manual to automatic controls is the obvious one of manpower, Beningson indicated, but fuel savings are possible, too.

"An over-fire draft control on larger systems (25 gals. per hour and up) will save an average of 15% on operating costs by reducing fuel consumption," he said.

With constant draft, air-fuel ratios can be set without difficulty, Beningson explained.

Conversion of an on-off system to a three-position or modulating system will not only save fuel but also reduce wear on equipment and cut maintenance costs, he added.

"There are, however, many systems in existence with modulating controls set merely for on-off operation because it takes more time to set up a modulating job," Beningson said.

MODERNIZATION CAN PAY FOR ITSELF IN 3 TO 4 YEARS

A control modernization job, he further explained, is usually sold on the basis of its paying for itself in savings within three or four years.

The apartment house owner, though, especially in New York City, would expect such a modernization job to pay for itself in a year because he probably will sell the building in four or five years, according to Beningson.

Discussing the opportunities of converting systems from No. 2 to No. 4 oil (as the terminology is used on the East coast), Wymbs pointed out there is a price difference of 3 cents per gallon plus the saving of another 1 cent per gallon due to the higher B.t.u. content of the No. 4 oil.

These savings should mean that the conversion job pays for itself in two to four years, he indicated. He also offered a "rule of thumb" that such a conversion can be considered for systems having a minimum of 10,000-gal. per year consumption.

Modernization of oil-burning systems usually have more appeal to the industrial user than the real estate operator, it was also pointed out by Ross, but he asserted that New York apartment house owners can be sold by using "the boogie of the local air pollution control agency."

Violations of the city's air pollution control ordinance can mean fines as high as $500, "which can scare apartment house owners who ordinarily simply pay a $50 fine every six months for other building violations," Ross declared.

A specific source of modernization business cited by Ross is the replacement of combustion chambers.

"Very possibly over the years the chamber has been changed so that it has become merely a lining, not a combustion chamber," Ross said. "A good combustion chamber should last only three to five years, so if it's lasted longer than five years, it is too large and doesn't support combustion."

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To Avoid Burnouts, Consultant Explains

How Critical Charge In 'Split' Heat Pumps, Using Cap Tubes Can Be Checked In Field

By C. Dale Mericle

ST. PETERSBURG, Fla.— Recent designs and unfortunate installation and service practices are combining to cause trouble with some heat pumps—poor performance on heating at best, burned out compressors at worst—according to a contractor manufacturer here who says he's called "the guinea pig of the heat pump."

For many years a designer and consultant to industry, as well as an in-warranty servicer, James "Hans" White and his firm Sealed Units, Inc., are often among the first to be involved in a serious field service problem, especially with heat pumps, which abound in Florida and neighboring areas.

Thus, he is quick to spot a trend. And he also can suggest some remedies, both for future design and today's service problems.

"Biggest problem right now is the split system heat pump using a capillary tube to meter refrigerant," White observes. "Too often a serviceman will overcharge such a system, which can result in flood-back to the compressor and a burnout of the unit," he says.

There is nothing inherently wrong with a capillary tube system, White would be the first to point out, but the industry has long recognized that the refrigerant charge in such a system is quite critical.

With a split system heat pump using a capillary, "additional 'designing' at the point of installation is required," he emphasizes, referring chiefly to the problem of determining the exact charge necessary to allow for the length of the refrigerant lines, etc.

There's also the problem of selecting the right capillary tube system for the ambient temperature to be encountered in winter, White indicates, and this applies to both self-contained and split system heat pumps.

For every 10° F. drop in outdoor temperature, starting say at 32° F., more restriction must be provided by the capillary to avoid flood-back and resultant compressor damage, according to White.

Thus, to successfully operate in a 20° F. ambient, a heat pump using a capillary would require a second capillary of greater restriction and a solenoid valve controlled by an outdoor thermostat to switch from the first to the second thermostat, he explains.

A "10° heat pump" would need a third capillary and solenoid valve; a "0° heat pump" would need a fourth, and so on, says White.

Economics obviously become involved.

Small, local manufacturers in southern Florida and the lower part of California ("often just one or two-man shops") are turning out capillary tube type heat pumps which are designed to operate at lower than 32° F. ambients, according to White.

Heat Pump Made for 32° Area Not Satisfactory For 20° Climates

"A national manufacturer could also produce a 32° heat pump at a competitive price, but it costs more to produce one to operate at 20° or lower temperatures due to the need for such things as defrosting switches, solenoids, for capillaries, heater cables for drip pans, etc.," he says.

Numerous problems would be faced by the manufacturer trying to produce and market heat pumps tailored to needs of different parts of the country, and if a 32° capillary type heat pump is installed in a 20° area, there's likely to be trouble regardless of who made it, White indicates.

Incidentally, White also points out that many heat pumps, until recently, had only a single capillary tube instead of the current design which calls for separate capillary tubes for heating and cooling.

"These single capillary systems were in for trouble from the start," he claims.

Answer to the problem at the design level is to use thermostatic expansion valves instead of capillary tubes even though the first cost may be higher, White contends.

'No Satisfactory Expansion Valve Available 'Til Last Year'

"Before last year, however, there wasn't a satisfactory thermostatic expansion valve available for a 'low temperature' heat pump," White declares. "The capillary bulb would lose control of the valve at low ambients.

"Now, by using a cross-charged bulb and having it installed in a well in the suction line instead of being merely strapped on the outside of the suction line, the expansion valve gives good control," White says.

While seriously questioning the design using a capillary in a split system heat pump, White also calls attention to poor installation practices, which he claims are rather common.

"The refrigerant lines of a split system heat pump should be installed above ground and each carefully insulated and the insulation vapor proofed," he states flatly.

There's no excess heating capacity in most heat pump installations, so any loss of heat from the lines between the outdoor and indoor sections penalizes the system, White explains.

"And all too often when a heat pump isn't producing enough heat, the average serviceman simply adds more refrigerant with the frequent result of an overcharge and ruined compressor," he adds.

Burying lines in a concrete slab or the ground is poor practice, in White's opinion. Even with insulation and a vapor seal on the tubing, the heat loss can be greater than with lines above ground, he says.

"Why heat the ground instead of the house?" he wonders. "Probably the main

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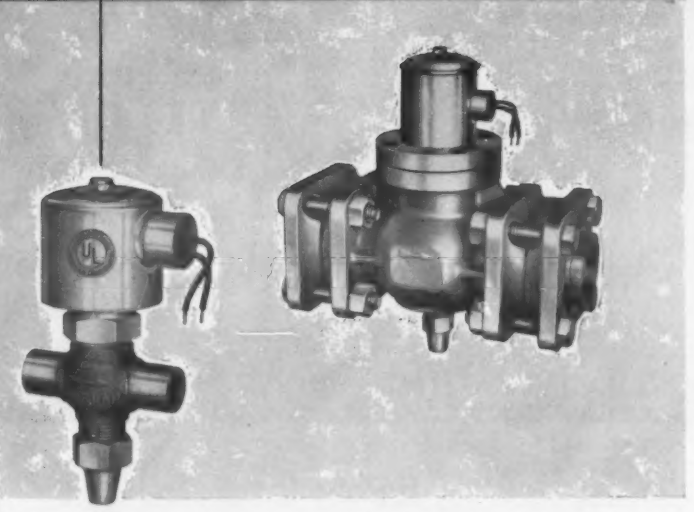

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trouble, though, is that the insulation or vapor-proofing will deteriorate, but this can't be observed because the lines are concealed. Besides, it's extremely expensive to inspect and repair buried lines," declares White.

Insulation and vapor-sealing of exposed lines above ground may also deteriorate, of course, but these conditions can be readily observed and repaired, White suggests.

Worst Practice Described

What is probably the worst practice, he believes, is running the two refrigerant lines through a buried conduit which is sealed at both ends. Usually 2-in. iron pipe or electrical conduit is employed.

"Condensation can occur within the conduit, and I've seen steam coming out of the conduit in winter, which represents a tremendous loss of heat that's not getting to the indoor coil. Actually," White continues, "I've measured refrigerant line temperatures as high as 215° entering such a conduit and only 145° at the conduit outlet. This is a tremendous heat waste."

Having both refrigerant lines in such a conduit presents no problem on straight air conditioning, of course. Such exchange of heat may even improve system efficiency for *cooling*, but not for heating, he emphasizes.

Service calls will no doubt result from such malpractices, but suppose there's a complaint of insufficient heating on a split system capillary tube type heat pump, and the lines seem properly installed and all other components seem to be operating correctly.

How Can You Determine If System Has Correct Amount of Refrigerant?

How can the serviceman be certain that the correct amount of refrigerant is in the system? Too small a charge will cut the system's capacity, and too large a charge, remember, may wreck the compressor.

Only solution is to attach pressure gauges and thermometers and check the system to see how it performs under design conditions.

"Design conditions" don't always occur, so the serviceman who has to wait until the weather is just right for checking the heating cycle of a heat pump will have problems and delays, unless. . . .

He creates his own design conditions. For this White suggests a method he's used several times:

Enclose outdoor section of heat pump in a "box," which can be constructed of wood. (For his own occasional checks of such systems White has devised a sectional tubular framework that is covered with a "hood" of clear plastic.)

Gauges are attached to the system and a thermometer is provided to show the temperature within the "box" or "hood" enclosing the outdoor section.

A thermometer can also be attached to the suction line if desired, but an experienced mechanic can judge temperatures here well enough by feel, White explains.

The heat pump has to be operated on the heating cycle, of course, which means also that the outdoor temperature should not be above 70° to 72° F.

"In warmer weather it may be necessary to run the test at night to obtain these conditions," White indicates.

The system is then run on the heating cycle until the temperature within the hood or box is brought down to design conditions. Because the serviceman may not know for sure exactly which temperature the particular heat pump may have been designed for, he should let the system operate until the temperature within the hood is at local winter design conditions.

If the design temperature within the hood is reached in about 10 to 20 minutes (depending on outdoor temperature), and the suction line temperature is in the range of about 40° to 50°, then the system has the correct charge.

If the system still isn't put-

(Continued on next page)

TO CHECK operation and refrigerant charge, which is so critical in a capillary tube type heat pump, especially with a split system, a hood or box should be placed over outdoor unit so that ambient temperature can be brought down to winter design temperature regardless of weather, suggests James "Hans" White. Here Fred Worthington and Norman Pfohl of Sealed Units, Inc. demonstrate one method.

WITH HOOD in place, pressures and temperatures are checked by Fred Worthington. (For keen observers let it be noted that this heat pump is not connected up; it merely demonstrates a typical installation for photographic purposes.)

PROOF THAT CHEVY'S BIG NEW CABS ARE BUILT FOR A BETTER DAY'S WORK!

"THESE TRAILS WOULD SHAKE THE CAB OFF AN ORDINARY TRUCK...BUT NOT OUR CHEVY" Few trucks are subjected to the body-wracking beatings that are part of a day's work for this Chevrolet Series 60 pulpwood hauler, owned by J. E. Fox, North Carolina logging contractor. As Bobby Fox, a partner in the business points out, "Loaded full-up with pulpwood, we drive right over stumps and potholes you'd think would tear the truck to pieces. These trails would shake the cab off an ordinary truck, but not our Chevy. Chevies are built to hold together longer."

■ No matter where you haul, you'll profit by the new toughness that's built into Chevrolet truck cabs for '60. You'll benefit from a cab that stands up to slam-bang runs over rough terrain, a cab that stays in A-1 shape years longer. Here are some of the ways in which Chevy assures this tight, maintenance-minimizing performance:

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2. Extra-sturdy door openings—box-section pillars and sills assure lasting alignment. Doors stay weathertight with a minimum of maintenance.

3. New double-walled roof makes cab stronger and safer. Box-section pillars provide solid roof support.

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First chance you get, visit your dealer and drive a new Chevy. Experience new Torsion-Spring Ride. Check up on Chevy's famous gas-saving 6's and V8's. Then you'll know, for sure, why you can expect thousands of extra miles out of a Chevy; why you can be sure of more work per day at least expense. . . . Chevrolet Division of General Motors, Detroit 2, Michigan.

1960 CHEVROLET STURDI-BILT TRUCKS CHEVROLET

Heat Pump Service, Installation--

(Continued from preceding page)

ting out sufficient heat, there's something else wrong, but the charge is correct and no refrigerant should be added.

If, however, there's a "frost-back" on the suction line to the compressor, as indicated visually or by too low a temperature of the suction line, then there's too much refrigerant, which will likely damage the compressor.

It should be remembered here that too much refrigerant, even though it can ruin a compressor, would not in itself necessarily cause insufficient output of heat. Under these circumstances, therefore, cause of that complaint lies elsewhere.

An under-charge of refrigerant would be indicated by too high temperature of the suction line and insufficient heating. Most often, though, White has found, there's more refrigerant than needed rather than less.

That this method of checking the refrigerant charge in a capillary tube type split system heat pump takes a certain amount of time is not denied by White. But he can devise no other way of doing it, and use of the "box" or "hood" over the outdoor section does make the serviceman pretty much independent of weather conditions.

The alternative, he reiterates, is a dissatisfied customer and, with increasing frequency, a burned out compressor.

Although the hood method of checking split system heat pumps is intended primarily for capillary tube units, White says it can also be used for systems using expansion valves.

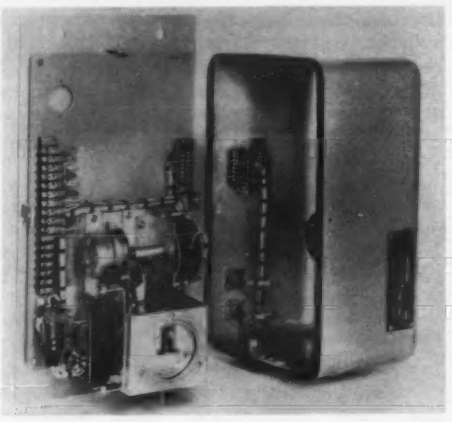
BTU Meter Allows Measurement of Both Heating, Cooling with Single System

NEW YORK CITY — A new "Sweep Balance B.t.u. Meter," designed for accurate assessment of heating or cooling costs on the basis of recorded consumption in either commercial or industrial applications, has been developed by Air Conditioning Equipment Corp. here.

The company is the United States and Canadian distributor of the Pollux Mechanical B.t.u. Meter which is used in shopping centers, airports, office buildings, and industrial plants, it was pointed out.

The new Sweep Balance Meter is the invention of Dr. George Keinath.

"The function of a B.t.u. meter in a heating or cooling system is to measure the volume or weight of the heating or cooling fluid and determine the temperature difference between the fluid entering and the fluid leaving the system," it was explained.



NEW "Sweep Balance B.t.u. Meter" is designed for either commercial or industrial application.

"Computing the product of these two factors provides total B.t.u. or the exact quantity of heat removed or added.

"Together the mechanical meter and the new sweep balance meter provide an application range for B.t.u. meters that includes virtually any situation in which charges for heating or cooling are to be based on recorded consumption rather than some inexact measurement, such as space occupied.

"As a result of exceptional temperature sensitivity," the company said, "the new meter can be used for cooling systems where the temperature difference is only a few degrees Fahrenheit.

"With the meter it is even possible to use just one instrument for both heating and cooling with a single system. In this case heating and cooling measurement would be indicated on separate dials."

Here's how the meter works:

"Every time a certain fluid quantity, for example say 25 gals., has flowed past the meter, a contact device sets a counting mechanism into operation. This counter will operate from 100 to 200 times a day, depending on the rate of flow.

"Temperatures are measured by two precisely-matched resistance thermometers specially designed to give the exact resistance difference regardless of temperature level.

"The actual computing device is a circular resistor or potentiometer, with a contact arm swept by a small synchronous motor over the full length of the potentiometer. Maximum speed is one revolution every two minutes.

"The total number of seconds recorded is added up at regular intervals, and these totals in seconds are converted into minutes by a separate counting operation. This time interval is then converted into B.t.u.

"When the counting has been completed, the whole circuit is automatically disconnected until the next impulse is given. At regular intervals the B.t.u. totals can be read to determine the amount to be charged to the consumer."

Available accessories for use with the sweep balance meter include a remote counter or a strip chart recorder that can be placed any distance from the integrator. The strip chart recorder gives the B.t.u. consumed at any hour during the day or night. "Temperature in" and "temperature out" are also available if required.

A separate control panel is also available for use where a predetermined number of B.t.u. are needed to activate external circuits used to operate other equipment.

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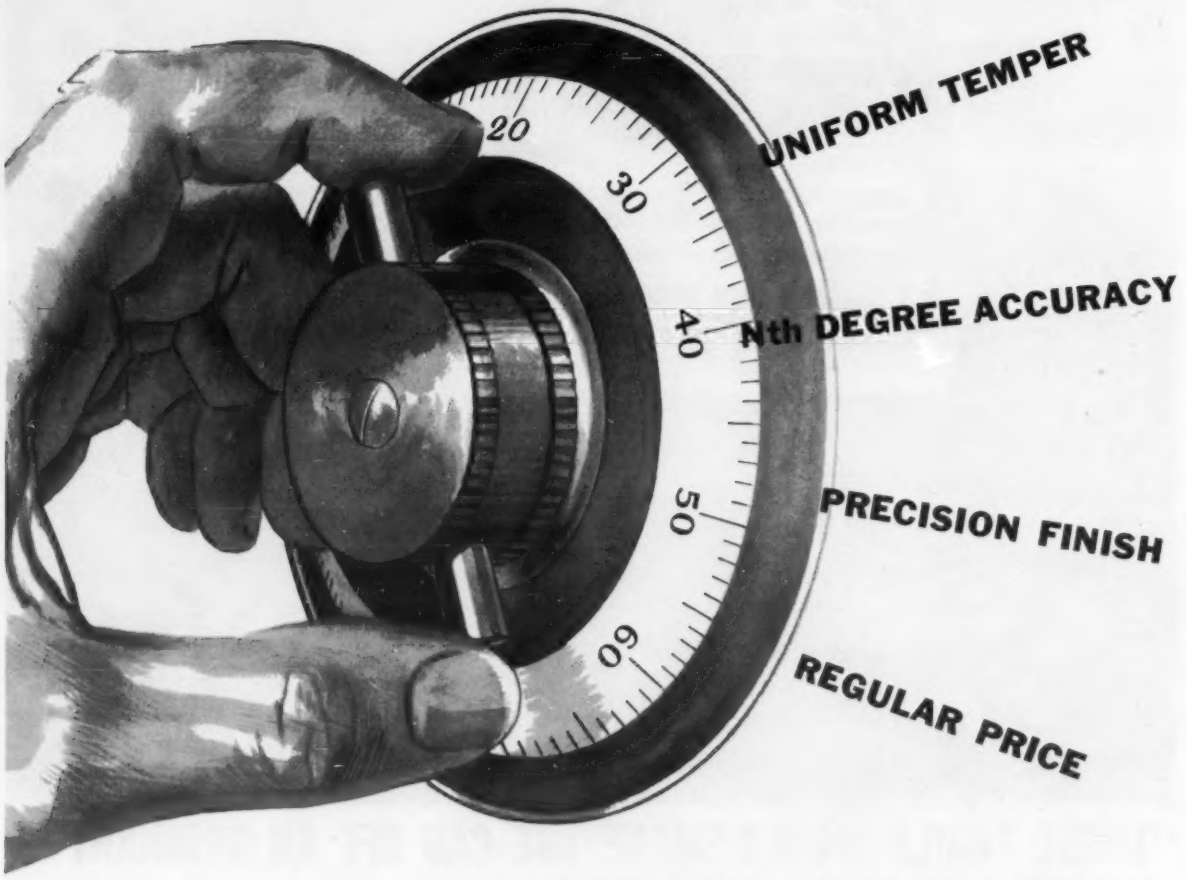

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Bendix-Westinghouse **MOTOR COMPRESSORS**

BENDIX-WESTINGHOUSE "OVAL-LINE" MOTOR COMPRESSORS PROVIDE GREATER EFFICIENCY... IN LESS SPACE...AT LOWER COST

Looking for compact ¼- or ⅓-h.p. motor compressor design that will let you provide more refrigeration space in standard-size cabinets?

Want a low-cost compressor with longer, more dependable operating life?

Anxious to find a compressor with greater operating efficiency?

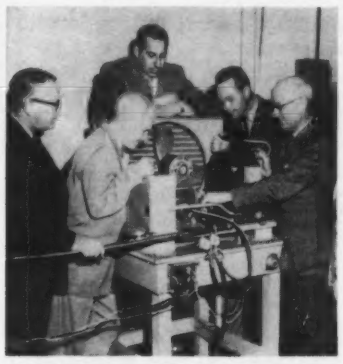
The YCH25V-1 and the YCH33V-1 models in the Bendix-Westinghouse "Oval-Line" provide *all* these advantages. Their two-pole design makes possible lighter weight, smaller size, and lower cost. They also supply such superior performance features as: inherent overload protection, better motor insulation, full suction gas cooling, positive pressure lubrication and glass terminals.

If you use fractional horsepower motor compressors in your manufacture of beverage coolers, vending machines, water coolers, dehumidifiers, or other general commercial type cooling equipment, investigate the Bendix-Westinghouse "Oval-Line" compressors. Call or write direct.

Bendix-Westinghouse

EVANSVILLE, INDIANA

A Division of Bendix-Westinghouse Automotive Air Brake Company, Elyria, Ohio
Export Sales: Bendix International, 205 E. 42nd St., New York 17, N.Y.



W. WALTON WOODROOF (right) manager of training and service for American-Standard Air Conditioning Div. is shown here with a group of the company's distributors who have been attending one of the week-long training schools at the Air Conditioning Div.'s enlarged Heating & Air Conditioning School at their Elyria, Ohio plant. Shown left to right are Lester John, Johnson Heating Supply Co., Portland, Ore.; Marvin Fetters, Consolidated Supply Co., Spokane, Wash.; Leo Garabedian and Charles Forrester, Mid-Valley Plumbing Supply Co., Fresno, Calif.; and Woodroof.

* * *

American-Standard Enlarges Heating, Cooling School

ELYRIA, Ohio—The newly-enlarged Heating and Air Conditioning School conducted by American-Standard Air Conditioning Div. at the Elyria factory on Woodford Ave. is attracting dealers and distributors from all parts of the country, it was reported recently.

The school is directed by W. Walton Woodroof, recently appointed manager of training and service. Before his appointment, Woodroof was manager of the division's cooling sales.

Woodroof said the school is designed to instruct dealers and distributors in all phases of installation and service of central residential and light commercial warm air heating and air conditioning systems.

The course is a five-day, intensive program. Two days are devoted to warm air heating and three days to summer air conditioning.

Subjects include heat loss calculations, heat gain calculations, designing duct systems for balanced air distribution, principles of refrigeration, automatic controls, wiring, heat pumps, electric heat, and installation and testing procedures.

The American-Standard Air Conditioning Div. also is planning a second season of traveling air conditioning clinics for distributor and dealer personnel. The one-day courses will be given in 40 cities across the United States and are expected to attract 800 students.

Last year, similar schools were staged in 30 cities for instruction of some 600.

Woodroof said the company feels the training program is necessary to prevent the demand for summer air conditioning from outstripping the number of qualified contractors.

Philadelphia ASHRAE Ends First Year at Du Pont Country Club

PHILADELPHIA—The Philadelphia Chapter of the American Society of Heating, Refrigerating & Air-Conditioning Engineers culminated its "first and very successful year" with an outing at the Du Pont Country Club, Wilmington, Del.

There were 503 members and guests present for dinner and the following ceremonies.

Newly-elected officers are: President (July-December '60) —William M. Mullin; president (December-June '61) Ludwig Mack; first vice president—O. M. Kershock; second vice president—D. S. Plewes; treasurer—A. A. Lincoln; recording secretary—H. N. Teuber; corresponding secretary—P. R. Anderson.

New Firm Opens In Birmingham, Ala.

BIRMINGHAM, Ala. — Ramseur Corp. is a new concern opened at 526 S. 32nd St. in Birmingham in the heating and air conditioning business.

The proprietor is W. S. (Bill) Ramseur, who was for eight years a design engineer with Carrier Corp. in Syracuse, N. Y.; nine years sales manager for Shook & Fletcher Corp. in Birmingham; and the past two years southeastern regional manager for Bryant Mfg. Co.

The new concern will carry the Carrier line.

Research Group Elects Daddario President

MYRTLE BEACH, S. C. — The Heating & Air Conditioning Research & Development Association with home offices in Raleigh, N. C., held its annual convention recently at the Ocean Forest hotel here.

Frank T. Daddario of Durham, N. C. was elected president for the coming year. Elected vice presidents were David W. Moser, Asheville, N. C.; M. A. Weaver, Collinsville, Va.; W. O. Blackstone, Columbia, S. C.; and Sam R. McCoy, Orlando, Fla.

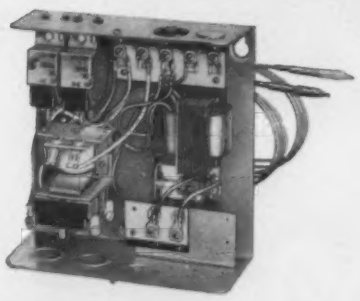
Acme Ind. Names Bishop

JACKSON, Mich. — Appointment of Richard L. Bishop as service manager of Acme Industries, Inc., has been announced by Peter A. Weatherwax, executive vice president and general manager.

R. L. Bishop

Bishop has served as sales engineer in Acme's Houston regional office since August, 1958. Earlier he had been marketing administration manager.

for residential air conditioning



SYSTEM CENTER
interlocks in one unit all heating-cooling functions for self-contained systems.

In Penn's newest line of Control Centers, field-replaceable parts are easy to get out . . . easy to get in *correctly* because all internal wiring is color coded. And, these color-coded leads are equipped with *quick-connect terminals* . . . no more looping of wire or soldering connections.

There are other advantages, too! Centers are small to save space in compact 2 and 3 H.P. units. Wrap-around cases save wiring time in factory and field. And, field-installed Fan Centers have Life Guard reverse panel construction. All operating parts are easily accessible, yet are fully protected against accidental damage. Write to the Penn factory for the complete story on these new, better Control Centers.

PENN CONTROLS, INC. Goshen, Indiana
EXPORT DIVISION: 27 E. 38th ST., NEW YORK, N.Y.

AUTOMATIC CONTROLS FOR HEATING, REFRIGERATION, AIR CONDITIONING, APPLIANCES, PUMPS, AIR COMPRESSORS, ENGINES

Specific Ways To Get Improvements Needed In Oil, Equipment Cited at OHI Meeting

NEW YORK CITY — If oil heating is to be promoted effectively, there must be improvement in installations, "free" service, less variation in oil characteristics, equipment that is better, smaller, and less expensive, and a single over-all trade association.

These suggestions were made by John Olson of the Nu-Way Corp. at a symposium sponsored by the Oil-Heat Institute Technical Div. during the group's 38th annual convention here.

"We must improve the manner in which we are installing our present devices," Olson declared. "A perfect example of this need came to our attention at Nu-Way when two of our customers, one a large boiler manufacturer and another, a large furnace manufacturer, requested that we set the burner air adjustment while the burners are being manufactured.

"Both of these customers told us that field surveys had proven to them that the installing serviceman had made no air adjustment whatsoever in more than 50% of their field installations.

"While it may seem ridiculous to use a pre-set air adjustment on a conventional high pressure oil burner, thus making no allowances for draft conditions or combustion air available, we were told that an approximate air setting is better than none at all. Let's face it, our customers deserve a better break than this," he emphasized.

More Money Needed For Service Schools

"A suggested remedy? We must make additional money available for oil burner service schools. A fine job is already being done in some areas and particularly by Oil Heat Institute of New England. Where is this additional money going to come from? I say that it is available from three sources: major refiners, fuel oil distributors, and the manufacturers.

"What organization is going to collect this money and administer the schools? It must be a trade association encompassing all elements of our industry," Olson suggested.

"Let me make a specific suggestion to the fuel oil distributors. Our common competitor, the utility companies, promoting natural gas are still offering free service in many areas. These free service programs have some variations, some include parts, some do not, others are for a two or three-year period after initial installation. Whatever the limitations, these free service policies have been fantastically successful in the promotion of natural gas.

"Why can't our industry take a leaf from their book? Some fuel oil distributors have a service contract available to their customers with an annual charge of from $20 to $40. Increase the price of the oil to the consumer by a fraction of a cent per gallon to include servicing of the equipment and then we too can offer the same so called 'free service,'" Olson declared.

"Variation of fuel oil characteristics is not only detrimental to the application and sale of our present equipment, but also offers serious obstacles to the development of new combustion techniques. This has vividly been demonstrated to us recently at Nu-Way.

"A new combustion technique and burner configuration is giving us very encouraging results when fired with a grade of No. 2 fuel oil generally available throughout the east and middle west, and also, when fired with oil obtained from the Pacific Coast; however, this same device when fired with an oil with the minimum characteristics allowable by CS12 standards has not yet given us satisfactory performance. I am sure that other manufacturers and research organizations are encountering the same difficulties," he said.

Citing the extensive research in progress, Olson commented, "The manufacturing element of our fuel oil industry, I believe has been guilty of not taking a greater interest in this research work being done by the major refiners. It is certainly time that we did. We as manufacturers, and I am not excluding my own company, have been quick to point to the low profit margins and have in many cases, used this as our excuse for not doing more basic research.

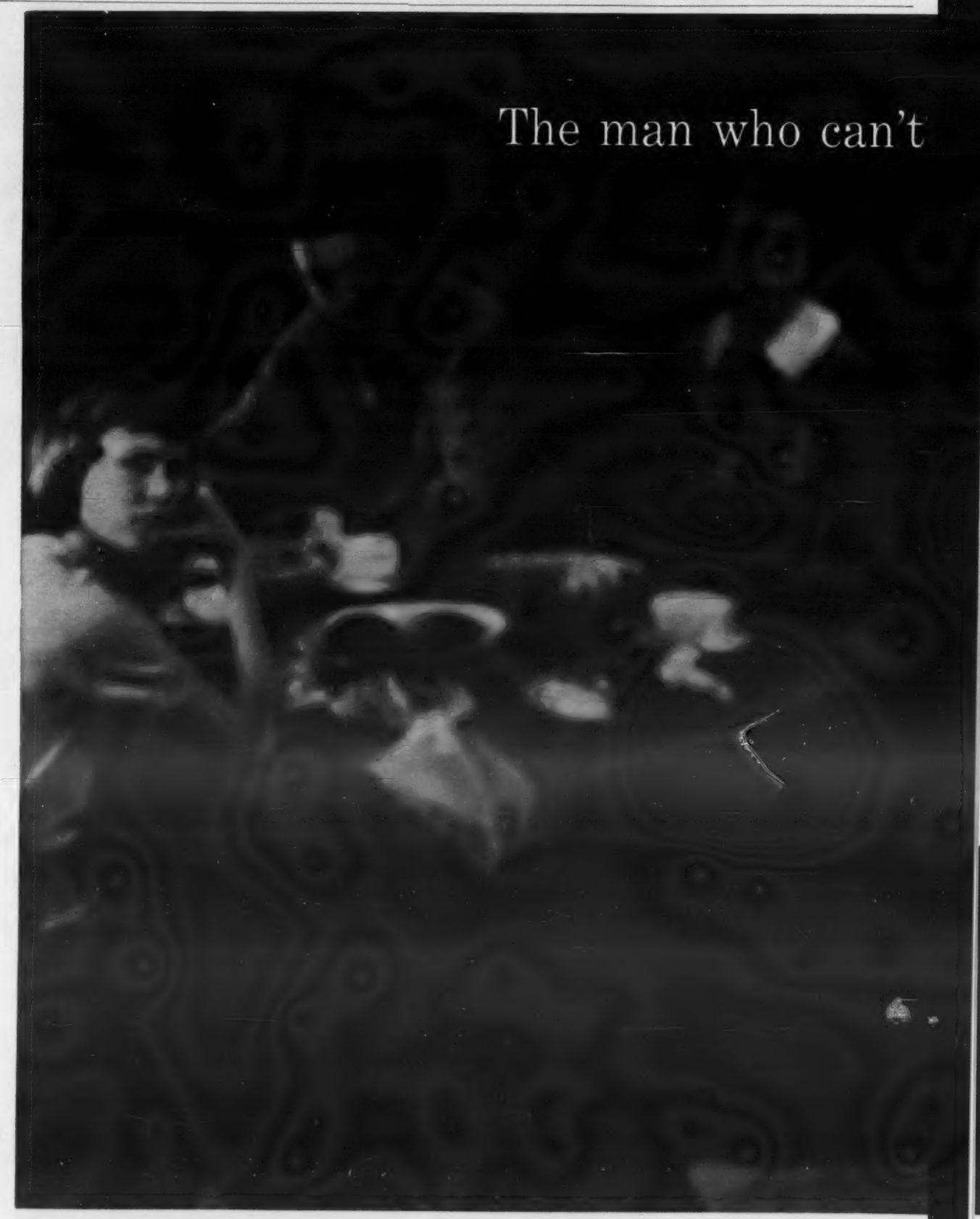
"We have no excuse for not taking advantage of the major oil refiners' research facilities, that in many cases, are available to us with no more cost involved than a sincere thank you," he said.

Some specific recommendations as to the characteristics and capabilities of needed new oil burner devices were offered by Olson:

"Lower capacity. Our conventional oil burning equipment apparently is not capable of firing below .50 g.p.h. Low pressure oil burners, now available, are capable of operating at inputs below a half gallon but the high costs involved present a severe limitation. We need lower capacity oil burners in order to compete with other fuels for a number of markets but two examples are readily apparent.

"A study made by one of the largest pre-fab home manufacturers indicates that at least 75% of their homes have a heat loss that would require oil firing at .60 g.p.h. or less. This study was not limited to homes situated in the south, but included the northern areas of the United States. I suggest that you contact National Homes, Inc., Lafayette, Ind. for the results of this study.

"A second example demanding burners with lower firing rates is the huge water heater market. Electric water heaters are handicapped by low recovery rates and relatively high fuel costs, but let's face it, natural gas does a fine job. The effect of our not having a larger share of the water heater market also adversely effects our sales of domestic heating equipment, since in an indirect



manner, we are telling the ultimate consumer that even if he accepts our fuel for heating his home, he must go to a competitive fuel for heating his hot water," Olson explained.

"Physically smaller units. Again, refer to the competitive fuels. The physical size of our present equipment is a handicap particularly when you consider the trend to packaged boiler burner or furnace units.

"Lower cost units. At the present time, the dealer cost on an oil-fired furnace, 80,000 to 100,000 B.t.u. range, is approximately $70 higher than a gas-fired furnace of the same capacity. A similar differential exists between the cost of oil and gas-fired boilers. When the cost of a fuel oil tank and the installation of this tank is also considered, equipment utilizing our fuel is at a serious sales disadvantage.

"In areas where natural gas is not yet available, we can compete nicely with propane because of the high cost of this fuel, but review if you will, the increased usage that LP gas has experienced as a fuel for domestic heating recently.

"Our present oil-burning equipment, either high pressure or low pressure, with its demand for an expensive pump, motor, and transformer should encourage further research and development of new combustion principles and burner configuration. These new combustion principles may involve the elimination of burners and burner accessories as currently being manufactured, but we must not allow this to deter us in our investigations.

"Whatever the new combustion principle and burner configuration, there will be room in our industry for the forward thinking manufacturer," Olson asserted.

"Control of firing rates. There is considerable research being done in oil-fired air conditioning units. One of the serious problems is our present inability to control a firing rate to plus or minus 5,000 B.t.u. at an input of 80,000 B.t.u. per hour. Nozzle temperature variations, nozzle orifice tolerances, and variation in fuel oil viscosities appear to be our present trouble spots."

'Comfort Crest' Award Goes to Oregon Home

PORTLAND, Ore. — The Oil Heat Institute announced that an Ellery Heights home has won the first "Comfort Crest Award" made by the institute.

The award is for heating engineering excellence in homes and was established recently by the more than 200 members of the institute in Oregon and southwestern Washington.

Manual Gives Insulation Data for Unusual Electrically Heated Homes

AURORA, Ill. — Forty-Eight Insulations, Inc. here announced that it has published an instructional booklet "covering insulation of electrically-heated houses that present problems lying outside the scope of the recently adopted minimum All Weather Comfort Standard for Electrically Heated and Air Conditioned Homes.

"The eight-page manual," it was stated, "gives the minimum specifications for insulation to meet the demands of more extreme winter and summer climatic conditions. It also lists the special requirements of ceiling-heated houses and those in which rates of air change or the area of window glass are greater than the values used for the establishment of the All Weather Standard.

"Specifications for loss insulation, batt and blanket insulation, and vapor barriers for ceilings, walls, and wood and concrete slab floors are included in the new manual."

The booklet "Plus Values from Insulation for Electric House Heating" can be obtained by writing to Forty-Eight Insulations, Inc., Aurora, Ill.

AGA Sees 57.5 Million Gas Appliance Sales In Next Five Years

NEW YORK CITY — Gas utilities and appliance dealers can sell nearly 57.5 million gas appliances during the next five years, the American Gas Association reports in summarizing its new analysis of residential market potentials.

The analysis indicates sales of gas-fueled appliances and residential equipment can, with accelerated product development and sales promotional effort, exceed sales in the years 1955-59 by 14.8 million units.

AGA estimates that in the five-year period ending in 1964, the gas industry can sell 18 million water heaters, 13.3 million ranges, 10.1 million space heaters, and 7.4 million central heating units. Also foreseen is the possible sale of five million clothes dryers, 3.3 million floor and wall furnaces, and 300,000 gas incinerators.

Radioactive Isotopes Find Hidden Leaks

CHICAGO—"I've got a hot spot with a howler."

Radioactive isotopes are being used by a Chicago plumbing and heating contractor to detect leaks in piping concealed in walls and floors or buried in the ground.

The radioactive isotopes are permitted to mix with water in a special type of large container.

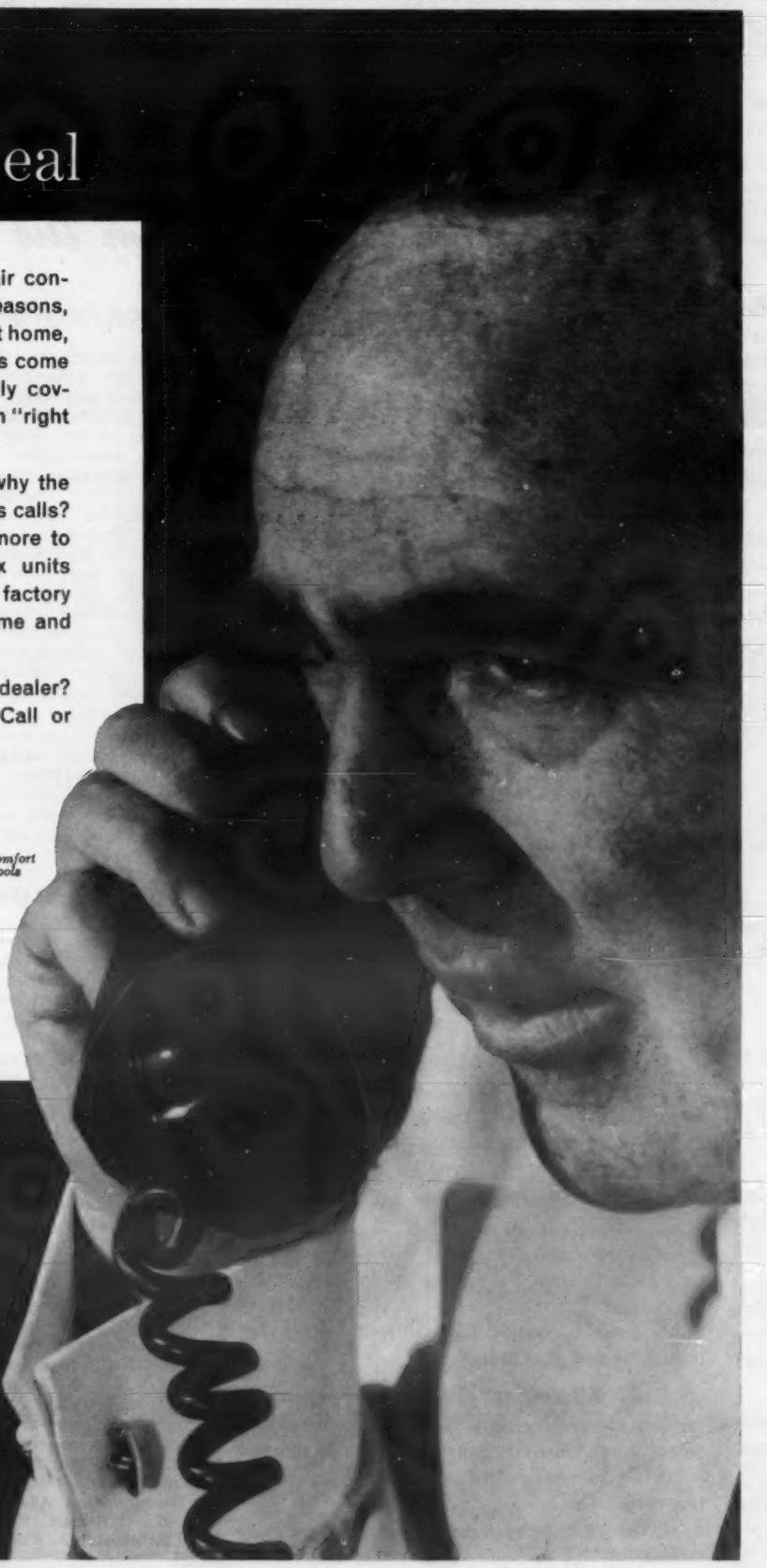
The normal water supply for the piping which is being tested for leakage is then shut off and the water containing the radioactive material flows through the pipe. Its progress through the pipe is followed with a Geiger counter.

At the spot where the leak occurs, there will be an intensification of the noise on the counter. This, to the workmen making the test, is the "hot spot with a howler."

By the use of additional instrumentation, the leak is pinpointed with perfect accuracy, says the Plumbing-Heating-Cooling Information Bureau. Thus there is no guesswork and no unnecessary digging or breaking into floors or walls to detect the exact spot at which a leak occurs.

Plumbing contractors who use radioactive isotopes to detect leaks must be licensed by the Atomic Energy Commission and must follow carefully defined regulations, it was noted.

"sandwich" a meal



Recognize him? He's the heating and air conditioning dealer. And, during the peak seasons, he's a stranger at his own dinner table. At home, or at the office, somehow the phone calls come in never-ending abundance. He's literally covered with requests for help—ranging from "right away" to "soon as possible."

But have you ever stopped to wonder why the *Lennox* dealer has fewer of those distress calls? It's because the Lennox factory does more to prevent them from happening! Lennox units come completely assembled, pre-tested, factory adjusted—ready to install in minimum time and with fewer call-backs.

Isn't it time for *you* to become a Lennox dealer? Get the full story without obligation. Call or write your nearest Lennox factory.

LENNOX *World leader in indoor comfort for home, business, schools*

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They'll Do It Every Time

by Jimmy Hatlo

HERE'S SELDUM SELZ, REALTOR, DRESSED TO SHOW A SUBDIVIDER SOME WILD AND WOOLLY ACREAGE····
WHY THE RAGBAG GETUP? DON'T YOU HAVE TO GO IN TO WORK TODAY?
YEAH····BUT I GOT A DATE TO TAKE BUSHWHACKER, THE CONTRACTOR, OVER THE JUNGLE GULCH PROPERTY··· ROUGH COUNTRY IN THERE····
WELL, SELDUM IS STILL WAITING FOR BUSHWHACKER···BUT LOOK WHO DID SHOW UP, RIGHT OUT OF FT. KNOX····
HOW DO YOU DO!? I AM MRS. DRIPPINGMINK··· I BELIEVE YOU HAVE THE GOLDFINSTER ESTATE LISTED···I WOULD LIKE TO LOOK IT OVAH···
REAL ESTATE
THANK AND A HATLO HAT TIP to GEORGE S. KNAPP, P.O. BOX 708, WOODINVILLE, WASH.
4-25
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Glimpse Into The Future

PROBABLY most people never have heard about the magnetic pinch plasma engine. Or a plasma-jet generator.

However, good friends, "plasma power" is something you will be hearing about soon —or even using yourself.

Researchers into this promising new field—who just now are getting organized—will make progress of an astonishing nature, it can be predicted safely.

The "plasma" with which we are concerned shouldn't be confused with the more familiar blood plasma. It has to do with esoteric physics.

In this realm, "plasma" involves the so-called "fourth state of matter"—neither solid, nor liquid, nor gas—but a stream or mass of ionized molecules.

There are both natural and man-made plasmas, we discover. In nature, examples are the aurora borealis, lightning, the earth's ionosphere, the tumultuous area around the sun. An example of man-made plasma is the glowing area of an electric arc.

Obviously there are major differences between the plasmas of outer space and those of earth and its atmosphere.

For instance, the plasma surrounding a star is in a thermodynamic equilibrium—which means that this type plasma doesn't revert back to an ordinary gaseous state.

Most plasmas within the earth's atmosphere are not in equilibrium. Thus, not much can be gained by trying to forecast the behavior of earthbound plasmas on the basis of astrophysical observations.

Plasmas are derived from gases. Yet they don't obey now-known physical laws governing gases. So researchers still are out in left field *in re* the laws which *do* govern plasmas.

Although industrial scientists are developing devices which use plasmas, engineers want to know much more about the fundamentals of this new "science."

At present, the study of plasma physics by our industry is said to be about where cryogenic research (ultra-low temperatures) was a decade ago.

Nevertheless, plasma researchers now are gearing up to make solid advances. Two examples:

(1) The National Bureau of Standards, which is shelling out some $1.5 million yearly on plasma research, plans to consolidate its various projects in this field and unite its plasma investigators into a single group.

(2) The American Physical Society has established a plasma research "section." This, one of the biggest operated by that society, includes not only astrophysicists, but such other allies as thermoelectric and solid-state specialists.

What will all this research accomplish? Control of plasmas, it is said, will lead to development of space engines, power from nuclear fusion, improved materials and communications for satellites, and numerous efficient industrial utilizations.

Studies now are under way on three particularly promising commercial applications: a super-hot welding torch; replacement of electronic devices which now require wires, capacitors, and other circuitry; plus conversion of heat directly to electricity (and *vice versa*).

For quite awhile the National Bureau of Standards has been studying the possible use of plasma trails—created by falling meteors—to reflect radio signals as they are bounced around the globe. An experimental system, taking advantage of these trails, already is operating promisingly.

Common objective of many scientists who are working on different phases of plasma investigation is to come up with a practical and economical way to control fusion energy.

This could lead to the use of the oceans as a cheap source of power—inasmuch as unlimited quantities of deuterium (an isotope of hydrogen) are present in sea water.

Two interesting developments in the search for new uses for plasmas are Republic Aviation's magnetic pinch plasma engine and Bell Aircraft's plasma-jet generator.

Basically, the former is a method for obtaining a jet thrust from an electric current. According to Republic, its engine ran continuously for more than 118 hours before being shut down for disassembly and analysis. That company feels that this device holds great promise as a power source for industry and commerce.

Bell Aircraft's plasma-jet generator creates power by means of a high-intensity electric arc. Energy is released while plasma reverts to gas, thus building up high temperatures.

Does all this sound 'way out? You may be selling its end-products some day!

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AIR CONDITIONING HEATING & REFRIGERATION NEWS

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F. M. COCKRELL, *Founder*

'The Conscience of the Industry'

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From the Files of the News

25 years ago . . .

Members of the executive committee of the American Radiator and Standard Sanitary Corp. came to Detroit to officially open a comprehensive factory display of all the air conditioning products offered by American Blower Corp., Detroit susbidiary. The display was established for the contracting trade and architects and consulting engineers, who might want to see all of the company's equipment at one time. . . . Crosley Radio Corp. has put into operation in its Cincinnati plant an air conditioned assembly department, said to be one of the first of its kind, for the assembly of Crosley refrigerator compressors.

Automatic Refrigerating Co., Frick distributor, installed nine low pressure condensing units, five of them for air conditioning, in Jack Dempsey's newly opened restaurant at 8th Ave. and 50th St., New York City. Outstanding feature of the whole restaurant is the series of refrigerated display rooms, enclosed in plate-glass windows, which take the place of walls. . . . The McCray Refrigerator Co. branch manager in Columbus, Ohio reports that the combination of walk-in cooler and single-duty display case makes the best type of installation for many modern food stores, claiming that such a combination is easier to work with and preserves foods better than using a double-duty case.

A "picture story" of the assembly of Universal Cooler compressors showed how the unit assembly is baked in dehydrating ovens for three hours at 250° F. under 29 in. of vacuum and assembly of units in a glass-enclosed room where temperature and humidity are held constant.

10 years ago . . .

Although other regulations on use of water were relaxed, New York City requirements that all refrigeration and air conditioning systems of 3 tons capacity and over must use water-saving devices still stands, Water Commissioner Carney announced. He indicated he considered the regulation on cooling systems to be permanent, that he expected it to yield permanent benefits for long-term conservation.

Air Conditioning & Refrigeration Machinery Association climaxed a year's operation that includes activities in the fields of codes and standards formulation, statistics and marketing, foreign sales promotion, and inter-industry relations. Arthur P. Shanklin, Carrier, is new ACRMA president, succeeding W. H. Aubrey, Frick Co. Singled out for special honor were six men from member companies who were the principal architects in the formulation of the American Standard Safety Code for Mechanical Refrigeration ASA B9. These were E. T. Benson, Frigidaire; J. R. Chamberlain, York; F. H. Faust, General Electric; W. A. Grant and D. M. Abel, Carrier; and W. R. Hainsworth, Servel.

Arizona State College in Tempe contracted for the installation of refrigerated air conditioning in its newly constructed science building.

Ideal serving temperature for beer is 40° F. and if it is served at less than 38° F. the dispenser is practically ruining it, Dr. Bryn Nissen of Anheuser-Busch told a REMA-RSES educational conference. But one Texan told the speaker "Why, Doc, we set the thermostats for 30° F. down in our country." . . . In a talk on field servicing of motors, B. L. Britt, Wagner Electric Corp., told servicemen "the only way to check a motor which apparently will not pull its load is to use a voltmeter and ammeter."

Frick Co. has released details of its new line of unit air conditioners, of which the 5-hp. size is the first to go on the market. . . . New building housing one of Cuba's largest insurance companies is being completely air conditioned by a 100-ton Airtemp chilled water system.

VETERAN TAKES EXCEPTION TO METHODS USED BY DETROIT RESIDENTIAL CONTRACTOR

A. R. Pool
Bradenton, Fla.

Editor:

Some "Kwick Komments" on "Not So!—Rainson" page 13, May 16 issue of AIR CONDITIONING, HEATING & REFRIGERATION NEWS. (Rainson, installation manager for a Detroit air conditioning firm, was explaining his residential air conditioning installation procedures following criticism by a NEWS subscriber.)

The writer has been in the repair end of household and commercial appliances and refrigeration and small and large air conditioning for nigh on to 30 years. The writer does not want anyone to think he knows what he is talking about. All he knows is what he reads in the papers. He is presently a dealer for one of the big three or four, as the case may be.

Rainson's comment No. 2 (He applies silver solder flux to cleaned copper fittings). Our manufacturer forbids the use of any flux whatsoever. So we use copper to copper solder. No flux and nitrogen flow.

Comment No. 3 (He installed filter-drier on residential air conditioner outside home next to condensing unit with sight glass on outlet side. He said this does not mean filter-drier is affected by ambient temperature changes.) Some dehydrants are adversely affected by temperature, some are not.

If you want to know when you have enough liquid in the receiver, put the sight glass next to the receiver (it will fool you sometimes). If you want it to show when the dehydrator is restricted, put it just downstream from the dehydrator.

If you want it to show when you have a solid column of liquid at the TEV, put it just upstream from the TEV. Again in both instances, it will fool you under certain circumstances.

Comment No. 5 (Rainson said wrapping suction and liquid lines together is recommended procedure by all manufacturers.) Our manufacturer forbids wrapping liquid and suction lines together. In fact they must not touch each other.

Comment No. 8 (He evacuates as close to 29 in. as his pump will maintain for one hour.) Twenty-nine inches is not a vacuum today. Our manufacturer insists on less than 500 microns on their air conditioning equipment in the field. We shoot for and get 100 microns or less. Usually it takes 14 hours or more.

A. R. POOL

PLEASED BY 'CHALLENGE TO HEATING DEALERS'

Public Service Co. of
Indiana, Inc.
Plainfield, Ind.

Editor:

I was very much pleased and impressed with your "Challenge to Heating Dealers" on Page 16 of the May 2, 1960 issue of AIR CONDITIONING, HEATING & REFRIGERATION NEWS.

I would particularly like to reproduce this editorial for distribution to our own sales employes and possibly within or without our company. I would appreciate it very much if you would write and give me permission to do so.

D. J. COOPER, Supervisor,
Heating Sales

NEWS readers are invited to write to the editor giving their opinions on any subject of interest to the industry.

ICE CREAM COMPANY 'SCOOPS' THE REFRIGERATION SERVICEMAN AGAIN

969 Jennings St.
New York, N. Y.

Editor:

I own and operate a small service organization, doing repairs and installations of commercial refrigeration and air conditioning equipment. As I am an interested reader of the NEWS for years, I would like your opinion on a problem which I come up against quite frequently.

A case in point: I have a refrigeration service call from a small luncheonette. After checking the equipment, I found that condensing unit in bad condition and beyond repair. I suggested the installation of a replacement. The owner agreed with me, and after giving him a fair estimate of the job, told me to let him think it over and to come back the next day, to possibly make the arrangements.

When I got back the next day, I saw the identical equipment which I suggested to him, already in place. He told me he got it from his ice cream company at cost, which turned out to be quite true after he agreed to let me examine his bill.

The customer paid for the machine exactly dealers net cost and wasn't even charged for the installation. This condensing unit, unbelievable as it may sound, doesn't even serve his ice cream equipment, which is a self contained freezer.

Now I am not opposed to any kind of competition, as a matter of fact I like it, because it provides me with a certain challenge to do better.

But I do not consider this kind of thing competition at all, because I don't engage in selling ice cream for profit, and in a situation like this, I never even have a chance in the first place.

RALPH B. HARRIS

La Crosse Wholesaler Acquires Facilities For Future Expansion

LA CROSSE, Wis.—The W. A. Roosevelt Co. has purchased the Badger Hide & Fur building and site, for future plant expansion, according to general manager, J. M. Brindley.

The newly-acquired property is located on the corner of Front and Vine Sts., just opposite the Roosevelt Co. The firm is a wholesaler of plumbing, heating, electrical, and refrigeration supplies.

Present plans call for replacing the present warehouse building with an additional customer parking lot.

Simplest **–yet the most efficient automatic hot gas defrosting system available at any price**

THE McQuay THERMEX® SYSTEM

McQuay offers you the simplest, yet the most efficient automatic hot gas defrosting system available anywhere—at any price. And you save up to 25% on initial costs with a McQuay THERMEX® system. The THERMEX® accumulator not only pledges extra rapid defrosting, but also guarantees complete compressor protection by trapping all raw liquid until it is vaporized.

The McQuay THERMEX® system is fully automatic, and the number of defrost cycles can be adjusted to meet any requirement. Before you select any hot gas defrost system, investigate the McQuay THERMEX® system. Eight sizes available from 3000 to 32,000 Btu/hr at 10° T.D. See your McQuay wholesaler, or write McQuay, Inc., 1607 Broadway Street N. E., Minneapolis 13, Minnesota.

McQuay Means Quality

McQuay INC.
AIR CONDITIONING • HEATING • REFRIGERATION

Urban Redevelopment

Convert Old Warehouse To Modern Air Conditioned Office Building

SAN FRANCISCO — In little more than six months, J. H. Pomeroy & Co., Inc., international engineering and construction firm, converted a 30-year-old building devoted to warehouse, ice plant, and ice storage into a modern, air conditioned office building.

Comprising six stories and basement, the reinforced concrete structure was completely changed, inside and out, to provide approximately 54,000 sq. ft. of office area, 36,000 sq. ft. of which is air conditioned. The non-air conditioned areas are on two floors Pomeroy has reserved for outside tenants.

The building is located at 755 Sansome St., in a downtown redevelopment area. When Pomeroy acquired it last September, officials decided to modernize and adapt the building to the company purposes rather than demolish it and build anew, according to J. G. Snelgrove, assistant to the vice president, who acted as project manager for the conversion.

A factor in the decision was an expiring lease on office space the company then had in the city's nearby financial center. The conversion to an ultra-modern, attractive, yet functional world headquarters for the parent firm, divisions, and subsidiaries was completed by early April this year.

Air conditioning of the four floors occupied by the Pomeroy organization with a 45-ton chilled water system posed a number of problems and called for considerable ingenuity, according to Russell O. Pearson, mechanical section supervisor in the firm's engineering division.

His story of the installation follows:

Story of Installation

The building is a six-story rectangular structure of heavy reinforced concrete construction, with round columns and slab floors. It fronts 66 ft. on Sansome St., facing east, and 136 ft. on Pacific Ave., facing north. The west and south sides of the building are continuous with adjoining buildings to the second and third story, respectively.

The building previously was used for warehouse and storage purposes, requiring minimum comfort conditioning facilities. The large open areas were provided natural ventilation by operable window sash with supplementary use of floor fans. Heating was by gas-fired and electric unit heaters.

Preliminary investigation indicated certain problems which required solution if the structure were to be transformed into a modern and efficient office building.

Because the building is of block type, large interior areas would have no exterior exposure. This would be complicated further by the division of these interior areas into individual offices.

The San Francisco climate is mild. The dry-bulb temperature seldom reaches 85° F. Nevertheless, it soon became evident that a high rate of ventilation would be necessary to maintain any kind of tolerable condition in the interior areas during periods of higher outdoor temperature. The heat generated by lights and people would have to be removed by means other than conduction to the outside through walls and windows.

The construction of the building is such that the introduction and removal of a large volume of air presented formidable difficulties. Also, the introduction and removal of the air through the planned curtain wall exterior was not considered desirable from an architectural standpoint.

Minimum service space utilization was a prime design consideration. The area selected for an equipment room on each floor was functionally unusuable for office space. It consisted of 80 sq. ft. of floor space around a 3-ft. diameter building column adjacent to an existing pipe chase and freight elevator.

The final design developed as follows:

A Trane circulating fan is installed on each floor adjacent to an existing pipe chase which extends from the ground floor through the roof. Each floor is divided into zones in the usual manner. A dual service heating or cooling multi-row water coil is installed for each zone at the point where its supply duct takes off from the fan discharge plenum. Air returns to the fan by way of the ceiling space, thus eliminating return air ducts.

Takes Less Space, Lowers Cost

The built-up air handling system as designed utilizes 40% less floor space than a package multi-zone air handling unit, and results in lower initial and operating costs than conventional induction or high velocity air conditioning systems used in building remodeling.

Only that quantity of filtered outside primary air necessary to maintain the quality of the air inside the building is introduced through a small duct extending down through the pipe chase from the roof with take offs at the individual floors and mixes with the return air in the fan intake plenum.

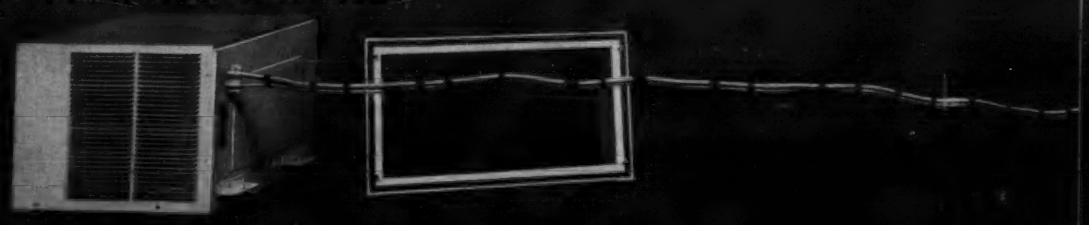
This air is cooled and dehumidified to provide humidity control to compensate for internal latent load and also to eliminate condensation on the zone coils and the necessity of providing drains for its removal.

Approximately 75% of the primary air quantity is removed from the building by toilet exhaust. The remainder is utilized to maintain positive pressure in the building, thus eliminating heating and cooling load tax due to infiltration.

Chilled water supply and return lines, and hot water supply and return lines, extend down from the roof in the existing

HERE'S WHAT YOU GET

An outdoor compressor section... connected by 18 feet of flexible hermetic tubing... to a furnace-top cooling coil—all factory-sealed, charged and tested. Plus a steel wall mounting frame.



HERE'S HOW YOU INSTALL IT...FAST

Bolt outdoor section to steel mounting frame...remove shipping braces... carry cooling coil to furnace and slide in. Hermetic installation complete. No concrete slabs to pour or set, no lines to bend or braze, no refrigerant charging, no outdoor wiring.

HERE'S HOW IT ASSURES YOU THE BEST

Spectacular savings in installation costs... plus a spectacular expansion in your market—these are only some of the advantages that Fedders FlexHermetic Air Conditioners offer to every installer.

Equally important is the assurance of outstanding performance and over-the-years reliability which FlexHermetic brings to every air conditioning job. All the critical installation procedures that have to be carried out under makeshift on-the-job conditions with conventional remote air conditioners, are performed under carefully controlled factory conditions by Fedders' technicians.

After a battery of tests proves that the hermetic circuit is perfectly sealed, the system is carefully evacuated. Then it is charged with refrigerant to the precise ounce. Finally the entire FlexHermetic is subjected to rigorous running tests.

All the factory techniques which have kept 2,000,000 Fedders factory-charged and factory-sealed air conditioning systems operating perfectly over the years, assure a perfect FlexHermetic installation every time.

pipe chase and are connected to the zone coils through Johnson modulating pneumatic three-way control valves.

The control valve selected in the design is a recently developed combination heating or cooling valve which modulates either chilled water or hot water flow to the coil in rapid response to zone thermostat demand.

There is no wasteful mixing, and as they always act in the same control signal direction, no seasonal change-over or reversing action is required.

Heat From Interior Warms Exterior Zones

Year-round cooling will be necessary in all occupied interior areas. It was noticed in design that the heat removed from these areas is more than sufficient to supply the heating requirements of the exterior zones with an outside temperature as low as 35° F.

Advantage of this fact has been taken in design. A hot water heating temperature such that refrigeration condenser water could be used for heating was selected. By a simple device employing the heat pump principal, the heat removed from interior zones in cold weather is used to heat the exterior zones, as follows:

A closed-circuit Drayer-Hanson evaporative water cooler is provided rather than the conventional cooling tower. Water leaving the condenser of the water chiller is maintained at 95° F. by modulating dampers in the water cooler inlet.

At full heating load, approximately half of the water leaving the condenser is diverted as the hot water supply and distributed through the building by a pump.

The hot water return is teed into the condenser water leaving line downstream from the point of diversion, so that all condenser water passes through the water cooler.

As heating demand falls off and the various coil valves modulate to decrease the hot water flow, the dampers of the water cooler tend to open, thus maintaining the 95° F. condenser-leaving temperature.

A minimum flow in the hot water circuit (as in the chilled water circuit) is maintained by a plug cock connection between the supply and return lines downstream from the last take-off.

Provision for Extra Heat

It is anticipated that the heating requirements of the building will be satisfied by this arrangement at any time the building is occupied.

To provide heat at other times—for example, for building warm-up before working hours after over-night or week-end shutdown in cold weather—a gas-fired water tube water heater is connected to the hot water line downstream from the pump in a by-pass controlled by a modulating three-way mixing valve, to maintain the hot water supply at 95° F.

The "once-in-13 years" minimum average daily temperature in San Francisco is 37° F. It is calculated that with all coil valves in full heating position and with hot water maintained at 95° F., the ambient temperature in the building will be increased to 65° F. in one hour after a full weekend shut down under these conditions.

The Trane water chiller is a hermetically sealed reciprocating unit with full automatic controls. The chilled water circuit is a simple pumped circuit with connections, as described above, to zone coils and to primary air coil.

The chiller, water coil, boiler, pumps, primary fan and coil, and motor control center are installed in a penthouse, in accordance with the minimum service space utilization concept.

Further operation economy is achieved by a nine-hour day, five-day week time clock operation of the air conditioning system with override provisions to allow individual floor air conditioning operation during overtime periods.

Temperature Measurement Conference Set

COLUMBUS, Ohio — A national symposium on "Temperature—Its Measurement and Control in Science and Industry" will be held here March 27-31, 1961, jointly sponsored by the American Institute of Physics, the Instrument Society of America, and the National Bureau of Standards, with other societies and governmental agencies cooperating, it was announced recently.

This will be the first conference of this breadth and scope since the New York conference on the same subject in 1939, according to the group's announcement.

"The symposium will be aimed at the fundamentals of temperature measurement to complement the material in the 1939 volume and will provide an authoritative blending of papers on the meaning of the temperature concept as well as analytical theory, with appropriate emphasis on instrumentation and the engineering aspects, e.g., thermocouples and radiation pyrometry in full range of temperature," it was explained. "Interests from cryogenics to ultra high plasma temperature will also be covered.

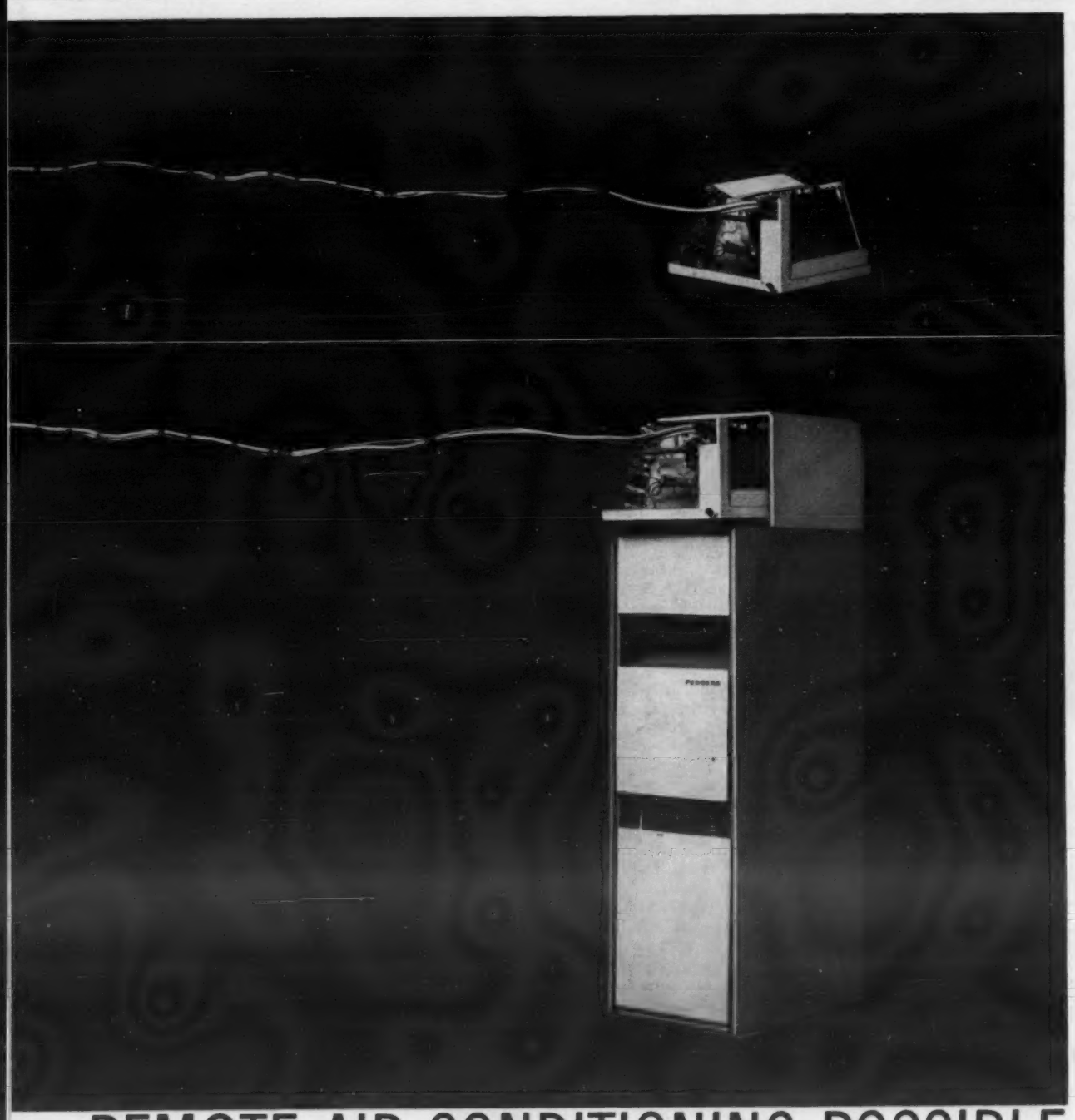
"The symposium is being designed to present broad fundamental coverage of the subject for scientific and engineering personnel who are concerned with temperature problems. A reference book based on symposia material will be published."

General chairman of the symposium is W. A. Wildhack, chief of the Office of Basic Instrumentation of the National Bureau of Standards.

Dr. Elmer Hutchisson, director of the American Institute of Physics is vice chairman, and C. L. Roberson, manager of the Mechanical Research Laboratory of the Owens-Corning Fiberglas Corp., is secretary.

Dr. C. M. Herzfeld, chief, Heat Div. of the National Bureau of Standards, is chairman of the Program Committee.

Those interested in contributing to the program should contact Dr. Herzfeld at the National Bureau of Standards, Washington 25, D. C., as soon as possible for details.



REMOTE AIR CONDITIONING POSSIBLE

(The furnace? Fedders' new FlexAire; with a relay-controlled, multi-speed blower that provides proper cfm for cooling and for heating automatically.)

F·L·E·X·H·E·R·M·E·T·I·C
UNIFIED REMOTE CENTRAL AIR CONDITIONING SYSTEM BY
FEDDERS

Central Air Conditioning Division, Dept. AC-6
Fedders Corporation, Maspeth 78, New York

Please send information and specifications on Fedders FlexHermetic Air Conditioners ☐; Fedders FlexAire Furnaces ☐; Have a Representative call ☐.

NAME

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Minneapolis-Honeywell Names Brandt, Toth

S. J. Toth

F. C. Brandt

MINNEAPOLIS — S. J. Toth and F. C. Brandt have been named to newly-created posts as sales managers for two of the major product lines marketed overseas by Minneapolis-Honeywell Regulator Co.

They have been appointed to new staff positions in the firm's home office International Div. organization; Toth as the division's residential sales manager and Brandt as its commercial sales manager.

Toth will direct foreign sales of Honeywell's residential heating and air conditioning controls and Brandt will be responsible for sales on a worldwide basis (excluding only the U. S. and Canada) of the wide range of products the firm supplies for use in controlling climate in commercial buildings.

Both Toth and Brandt will report to C. B. Meech, International Div. vice president. "These appointments will provide top-level specialized liaison between our division's field organization abroad and the U. S. divisions handling the same products," Meech said.

Toth joined Honeywell in 1950 and most recently has been a staff assistant to Meech on residential heating and air conditioning controls. During a 24-year career with Honeywell, Brandt has held a variety of sales and administrative posts.

Export Opportunities

Iraq, England Seeking American Equipment

WASHINGTON, D. C. — Export trade opportunities in Iraq and England were listed recently by the Business & Defense Services Administration, U. S. Dept. of Commerce.

Refrigerators, air coolers, and air conditioners, 220-volt, 50-cycle, for household use are desired on both direct purchase and agency basis by Ali & Ahmad Bahbahani Co. (importer, wholesaler, retailer, agent handling automotive vehicles, machinery, radio sets, typewriters, and calculating machines), Rashid St., Baghdad, Iraq.

Also listed in the government bulletin were these opportunities in England:

Refrigerators, up to 10,000 per year, approximately 4 cu. ft., as well as other electrical appliances—H. Jondorf (manufacturer's agent), 8 Temple Fortune Court, Temple Fortune Lane, London , N.W. 11, England.

Refrigerators, washing machines, etc. — Stearn Electric Co., Ltd. (wholesale electrical supplier), 31 Vauxhall Bridge Road, London, S.W. 1, England.

Marshall J. Bean To Manage Airtemp Export Administration

DAYTON — Two promotions have been announced in the sales department of Chrysler Corp.'s Airtemp Div.

Marshall J. Bean has been appointed as manager of export administration and Richard J. Leaman will succeed Bean as manager of sales administration.

Bean's new position involves maintaining close liaison between Chrysler and its international operations, and distributors in Canada and Hawaii.

Leaman joined Chrysler in June, 1959 as credit manager. His new duties concern the processing and shipment of products to distributors throughout the United States.

Frozen Food Use Prompts Large Norge Shipment to England

CHICAGO—A 158-ton shipment of 750 Norge refrigerator-freezers "for a new British market" sailed to England Borg-Warner International Corp. announced.

This shipment of single and two-door 12 and 13-cu. ft. units is the second quarter of an order "valued at nearly $750,000" for 3,000 units sold to the Kenwood Mfg. Ltd., Woking, Surrey, England.

"Use of frozen foods in England has increased astronomically in the past three years, opening a new British market for the large refrigerator-freezer," said Rowland Burnstan, president of Borg-Warner International.

Infant Indian Service Group Struggling To Perpetuate Itself

CALCUTTA, Ind. — Although composed of less than 200 members, the Indian Society of Refrigerating Engineers, with national offices here, is struggling valiantly to perpetuate itself and to further the advancement of refrigeration and air conditioning in India.

"We are an extremely infant society till now because the refrigeration industry itself has only just begun to be recognized in India," states ISRE President G. Ramchandani.

Founded in 1949, the ISRE is in active contact with the Government in regard to the recognition of the need for Government sponsored technical education.

In the meantime, the ISRE operates a refrigeration and air conditioning school in Calcutta. The courses are aimed at the mechanic level, but "we plan from next year to have our own institute premises and run an advanced course as well as a course for design engineers and another one for plant operators."

The society also publishes a small monthly periodical, "The Thermometer," which carries brief news articles and technical information. Those wishing to contact the ISRE may do so by writing to 7 Hare St., Calcutta 1, India.

Voltas, Ltd, Distributes Carrier In Bombay, India

BOMBAY, India—Voltas, Ltd. here is distributor for Carrier Corp. In addition, the manufacturing section produces air conditioners and water coolers locally using both imported and domestic products.

THE NEWEST ADDITION TO THE
Havens FAMILY

Centrifugal Blower Fan Cooling Tower Series

C. B. C. Series are 10 to 150 ton rugged towers featuring access panels for quick and easy inspection.

SHIPPED ASSEMBLED..... BUILT TO LAST

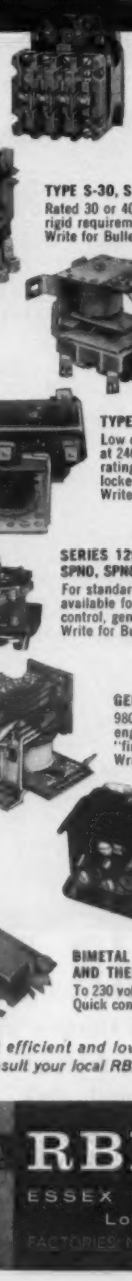
- All Steel parts are hot dip galvanized after fabrication.
- Quieter Operation.
- Centrifugal blower fan
- All select heart Redwood fill.

HAVENS assures you quality, performance and minimum maintenance in every Tower—

Write for New Free Bulletin

Havens COOLING TOWERS
Division of
HAVENS STRUCTURAL STEEL COMPANY
1713 Crystal Avenue Kansas City 26, Missouri

THIS
COMPLETE CONTROL FAMILY
is especially engineered for the air conditioning industry (including heat pumps)
by RBM



TYPE C-30, C-40, C-50 CONTACTORS
2-3-4 pole 30 amp.—600 volts.
2-3-4 pole 40 amp.—230 volts.
2 pole 50 amp.—230 volts.
Same mounting holes and coils for all ratings and pole forms.
Write for Bulletin 1070.

TYPE S-30, S-40 CONTACTORS
Rated 30 or 40 amps. Low cost, small size. Exceeds rigid requirements of industry's largest users.
Write for Bulletin C-10.

TYPE 80 CONTROLLER
Specific design for nominal 3 HP or 3-ton single phase compressors.
Write for Bulletin C-11.

TYPE 75 POWER RELAY
Low cost, dependable. Handles up to 6000 W. at 240 V., resistive load per pole. Compressor rating 2 poles, 18 amp. running, 90 amp. locked rotor at 250 volts.
Write for Bulletin 1030.

SERIES 129000 SHUNT TYPE RELAY — SPNO, SPNC OR NO-NC
For standard commercial voltages. Other coils available for special application. For heater, fan control, general circuit switching, etc.
Write for Bulletin 1010-A.

GENERAL PURPOSE RELAY
98000 Series AC or DC. Permits engineering short cuts lowering "finished product" cost.
Write for Bulletin 1060.

SERIES 128000 POTENTIAL STARTING RELAYS
For starting single phase capacitor start compressors.
Write for Bulletin 1010-A.

BIMETAL TIME DELAY RELAYS AND THERMOSTATIC DEVICES
To 230 volts. NO-NC. Heater common to contacts. Quick connect terminals. Write for Bulletin C-15.

For the most efficient and low cost solution of your control problems, consult your local RBM Product Application Engineer.

RBM CONTROLS DIVISION
ESSEX WIRE CORPORATION
Logansport, Indiana
FACTORIES: North Manchester and Logansport, Ind.

Shreveport Dealers To Get Silver Shield Story on June 15

SHREVEPORT, La. — At a meeting scheduled for Wednesday evening, June 15, in the first floor meeting room of Southwestern Electric Power Co., 428 Travis St., heating and cooling dealer-contractors from throughout the Greater Shreveport-Bossier county marketing area—some 75 of them—will get first-hand the story of the Silver Shield concept.

Silver Shield is the name given to an upgrading, promotion, and organizing program developed by the National Warm Air Heating & Air Conditioning Association of Cleveland.

Arrangements for the meeting were made in cooperation with Tom Harper, president, and Herman Meyer of the Shreveport Association of Residential Air Conditioning and Heating Contractors, chairman of the Silver Shield Action Committee.

Also in attendance will be dealer-contractors from throughout Caddo and Bossier counties and the representatives of numerous manufacturing companies, it was reported.

Mueller Climatrol Names Von Munkwitz

MILWAUKEE—Richard von Munkwitz has joined Mueller Climatrol as national account sales supervisor.

Von Munkwitz

He will be responsible for contacts in the government housing field and with buyers of heating and air conditioning equipment who have nationwide operations, said R. B. Schmidt, Mueller Climatrol's general sales manager.

Von Munkwitz was formerly assistant public relations director of the National Warm Air Heating & Air Conditioning Association. He was responsible for establishing Silver Shield programs in various parts of the nation.

'Two for the Money' Campaign To Culminate In Temco Month

NASHVILLE, Tenn.—In celebration of its 2,000,000th heating unit, Temco, Inc. is offering a "Two For The Money" promotion which culminates in National Temco Month in September.

Temco distributors are offering premiums or additional incentives to Temco dealers, who in turn are offering free "Fieldcrest" blankets to the consumer.

In addition, distributor salesmen across the country are competing for several Renault cars which will be awarded in November at the Temco factory here.

NEWS readers are invited to write to the editor giving their opinions on any subject of interest to the industry.

How To Build To Beat the Heat And Keep Home Cooling Costs Down

ACCORDING to air conditioning experts, there are five ways dat ol debbil heat sends up the temperature in your home. Direct radiation from the sun, and the heat and water vapor in the outside atmosphere are three important ones. Also, heat and moisture is released by occupants, and by lights, appliances, showers, and other household devices. To provide effective low-cost air conditioning, today's year-round comfort conditioned home makes use of the design, location, building, and shade techniques shown at right to reduce heat load. In a "new look" air conditioned home, roofs become white and roof overhangs extend to protect windows from radiant glare. Careful attention is paid to orientation of windows and walls, with window concentration on north and south exposures. Along east and west, the house is sheltered from the worst heat of the sun by walls without windows, a garage, and by shading devices such as trellises or landscaping.

HOW TO CUT AIR CONDITIONING COSTS
Insulate walls and attic.
East-West roof line cuts down sun load.
Trellis shades east or west wall.
Garage shades east or west wall.
Paint walls a light color. Use white or light roof.
Roof overhang for south shading.
Tree cuts off sun in summer.
Copyright 1956, Carrier Corporation

FORMAL presentation of a Silver Shield operating license climaxed proceedings when the Oakland Indoor Comfort Bureau staged its "christening" banquet at Pontiac, Mich. recently. Presentation of the license was made by Homer Brundage, (center) chairman of the board of The Brundage Co. and a trustee of the National Warm Air Heating & Air Conditioning Association. Receiving the license was Bryan French (left), president of the newly-opened bureau. Joining them for the official presentation was James M. Martin (right), managing director of the NWAHACA.

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13 top-name heating and cooling equipment manufacturers use FRAM AIR FILTERS

Reason: Revolutionary Permachem-treated Celanese fibers keep air hospital clean, lengthen filter life

Now, one filter gives you all the selling advantages you need to build a profitable replacement business: The revolutionary new Fram Air Filter. 13 top-name air-conditioner and forced air furnace manufacturers are using Fram as original equipment this year—and for good reason. Tests conducted on this new achievement proved (1) Celanese fibers engineered exclusively for Fram cut down surface loading . . . provide full depth maze filtration, giving 34% greater filter life. (2) Permachem treatment for fibers actually kills 99% of trapped bacteria . . . keeps air hospital clean. (3) There's no "sliver problem" to make handling difficult. Find out how *you* can offer your customers this better performing, longer lasting filter. Write or call for information, Fram Aire Corporation, Providence 16, R. I. All sizes, both in rolls and pads. Listed by Underwriters Laboratories.

Celanese Fibers Company, a division of Celanese Corporation of America, N. Y. 16.

Celanese® industrial fibers

Basics of Fractional Horsepower Motors

MASPETH, N. Y. — A new book on fractional horsepower motors has been written by Gerald Schweitzer, training and service publications supervisor, Fedders Corp.

Entitled "Basics of Fractional Horsepower Motors and Repair," the 168-page book has numerous illustrations and diagrams to support the text. There are separate chapters on split phase motors; capacitor motors; repulsion motors; shaded pole motors; universal motors; and three phase motors.

Of particular interest to appliance service companies, it was pointed out, are the trouble-shooting charts for each of these motors. For every symptom, there is a series of probable causes and remedies. A chapter on motor testing, with emphasis on short circuits and motor grounding, is one of the highlights of the volume.

The book was published by John F. Rider Publisher, Inc., 116 W. 14th St., New York, N. Y. It is available from the publisher for $3.90.

●

Catalog Describes Pipe, Electrical Markers, Signs

BAYSIDE, N. Y.—A 24-page catalog issued by North Shore Nameplate, a division of Anodyne, Inc., 214-27 Northern Blvd., Bayside 61, N. Y., provides information on pipe markers, electrical markers, numerals, letters, safety signs, and identification signs.

All items in the line are printed on waterproof vinyl cloth furnished on quick-release dispensing cards, and are backed with an instant-stick adhesive.

Installation Guide to Hydronic Heating

NEW YORK CITY—A new I-B-R Installation Guide No. 800, "Hydronic Heating Systems," has been published by the Institute of Boiler & Radiator Manufacturers.

Incorporated in this guide is information, developed by research conducted in the I-B-R Research Home, regarding the use of small size copper tubing for branches, it was pointed out. The pipe sizing tables have been revised to include ⅜-in. copper tubing.

Guide No. 800 is composed of four sections: (1) "Boilers and Heat Distributing Units," (2) "Forced Hot Water Heating Systems," (3) "One Pipe Steam Systems," and (4) "Indirect Water Heaters."

"The institute has gradually been consolidating its publications so that contractors and wholesalers will have readily available, in the least number of publications, all the information they require for proper calculation, design, and installation of hydronic heating systems," the I-B-R said.

"Now only three guides are needed for heating: Installation Guide 800 ($1.50), Piping Guide 700 ($1), and Heat Loss Calculation Guide H-20 ($1). Write I-B-R, Rm. 408, 608 Fifth Ave., New York 20, N. Y."

●

Issue Engineer's Manual On Steam, Water Service

SKOKIE, Ill.—An Engineer's Manual on Steam and Water Service, intended chiefly as a guide in the selection of automatic heating and cooling controls, has been issued by The Powers Regulator Co., manufacturer of temperature and humidity controls, 3434 Oakton St.

"The manual is designed with typical examples, offering workable systems to solve certain control problems, without limiting the reader's choice of mechanical equipment."

●

Brochure Covers Commercial, Industrial Air Conditioning

COLUMBUS, Ohio — A new, four-color brochure covering the products used in commercial-industrial air conditioning has been released by Janitrol Heating & Air Conditioning, a division of Midland-Ross Corp., Columbus 16, Ohio.

The featured product is the newly-designed 52 Series outdoor condensing unit, which is claimed to operate with greater efficiency due to use of an oversized condensing coil, positioned diagonally in the cabinet. This unit is air cooled and operates in outside temperatures up to 125° F.

Other equipment included are add-on cooling units, self-contained systems, suspended blower coils, and year-round systems.

●

Bell & Gossett Products For Residential Use

MORTON GROVE, Ill.—Bell & Gossett Co. has published a new 25-page catalog illustrating its line of water heaters, coolers, pumps, valves, control units, other component products for heating and cooling homes.

Key models in each of the product categories are pictured and diagrammed. Accompanying technical data explains the exact functions performed, the performance capacity range, the materials of constructions, and the special features offered.

Copies of the catalog may be obtained free by writing to Bell & Gossett Co., Morton Grove, Ill., and asking for Catalog GC-1259A ("Hydro-Flo Products for Heating and Cooling with Water").

●

Tapped Winding Transformer Discussed In Acme Bulletin

CUBA, N. Y.—A new Tapped Winding Transformer Bulletin No. 162-B01 issued by Acme Electric Corp. here lists causes of common off-standard voltage conditions and provides information on transformers designed with tapped windings so that connections can be made to supply standard 115 or 230 voltages from available supply circuits that are off-standard.

The special and widespread requirement for proper voltage adjustment necessary for nominal voltage to operate hermetically sealed refrigerator motors is described in detail.

●

BAC Bulletins Give Data On Condensers, Towers

BALTIMORE—New bulletins on evaporative condensers and cooling towers have been announced by Baltimore Aircoil Co., Inc.

A 24-page bulletin (107) covers the complete line of evaporative condensers from 10 to 700 tons in single, factory-assembled units, and a 28-page bulletin (207) covers the company's line of fireproof cooling towers in the same range.

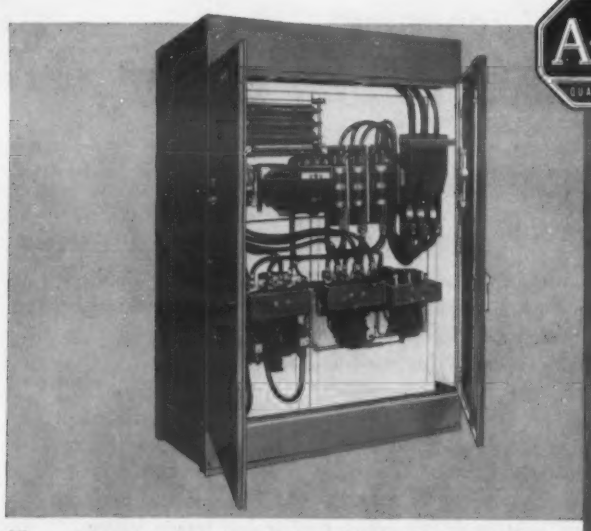
Where
ALLEN-BRADLEY
Trouble Free Motor Control
Is Especially Valuable!

It's only natural to find Allen-Bradley—the *quality* motor control—being used with the large and important air conditioning jobs. The simple solenoid design —exclusive with Allen-Bradley in *all* starters up through Size 8—has only ONE moving part. With virtually nothing to go wrong, years of trouble free performance are assured. And the double break, silver alloy contacts—standard with all Allen-Bradley control—always remain in perfect operating condition. The permanently reliable "solder pot" overload relays are always on the job, irrespective of time or installation conditions, to protect against motor burnouts. Insist on Allen-Bradley—the motor control you can install and forget.

Allen-Bradley Co., 1313 S. First St., Milwaukee 4, Wis.
In Canada: Allen-Bradley Canada Ltd., Galt, Ont.

Newly air-conditioned Roosevelt Hotel in Cedar Rapids, Iowa. Being somewhat distant from a metropolitan area, continuous operation—without "service calls"—is mighty important. Here, especially, trouble free control can prove its worth! The Allen-Bradley control panel, below, serves the complete air conditioning system for the hotel.

Consulting engineer: W. E. Nanes, Des Moines, Iowa.
Electrical contractor: Paulson Electric Company, Cedar Rapids, Iowa.



View of compressor motor starter cabinet with doors open. A-B Bulletin 1238 star delta reduced voltage starter with closed circuit transition smoothly accelerates the motor.

Main Allen-Bradley control panel consists of cabinets for the 380-ton compressor motor starter alongside the Bulletin 798 control center housing A-B starters for auxiliary pump motors.

ALLEN-BRADLEY
Member of NEMA
Quality Motor Control

Air Conditioning Keeps Greeting Card Firm's Presses Rolling Despite Humidity

CINCINNATI — One of the world's largest producers of greetings cards and related products, the Gibson Art Co., is today solving its printing problems in a multi-million dollar air conditioned plant that turns out well over one million cards a day.

The plant boasts more operations under one roof than any other printing plant in the world, according to Bruce W. Jones, plant engineer.

The 410,000-sq. ft. plant, located on a wooded, stream-crossed 114-acre tract in suburban Amberley Village, houses the company's complete operations.

It consists of a 150,000-sq. ft. warehouse, a 58,000-sq. ft. office, and 212,000-sq. ft. plant. Departments are arranged for simple flow and minimum travel of in-process work.

A. M. Kinney, Inc., consulting engineer, designed the building and selected the air conditioning equipment. He chose a Carrier absorption unit of 340 tons' capacity.

The equipment maintains in-plant conditions of 80° F. and 50% relative humidity in summer and 75° F. and 50% r.h. in winter with a variation of plus or minus 2%.

Strong factor in the selection of the absorption equipment was a lower gas rate when summer consumption is at least 25% of winter usage. Not only was a gas-fired boiler used for the air conditioning system, but two large boilers in the next room were switched to gas for year-round use.

The absorption machine reduces 280° F. water to 44° F. water.

Cool as well as warm water is piped to three major air handling units. One serves the main office and the second floor creative departments. The second services the 350-seat cafeteria. The third serves the engraving and printing areas.

The office area is held at 78° F. for comfort conditions. Heat from two recently acquired electronic data processing machines is also dissipated by the cool, conditioned air.

The floor above is known as "Sentiment Center." At one end, 48 artists create 5,000 new greeting card designs each year in a studio illumined by desirable northern light from sawtooth skylights.

In another room on the same floor are seven writers who create the verses and the lettering artists who draw them. Air conditioning maintains an optimum atmosphere for these high paid creators and prevents their soiling valuable work with perspiration while keeping out airborne dirt.

In the plant area, the entire process from plate-making to final printing takes place under the same atmospheric conditions, with thermo-humidigraphs in each department keeping track of temperature and humidity. Seven overhead humidifiers provide correct winter humidity.

"Last summer many local offset printing shops without air conditioning had to close down," George Proud, vice president in charge of production commented, "but we were able to print all summer despite the fact that we had 59 days of 90-plus temperatures. If the air conditioning ever failed, we would have to cease most of our operations."

The use of pre-conditioned paper eliminates the problem of wavy edges, and controlled conditions in the pressroom prevent paper from changing size between color impressions. Humidity changes have been known to stretch or shrink large sheets a half inch or more.

Of all the advantages to air conditioning, the biggest in the eyes of Gibson officials is in offset printing. Very often as many as 10 full press-sheet size layouts must be made for each group of four to 24 different cards.

After these are photographed and opaqued, the filmed images are arranged in press-form groupings that are in exact register with the layouts. Humidity variations would make perfect register virtually impossible.

To further insure perfection, a quality control team constantly checks printed matter just off the press.

Acme Electric Building To Be Air Conditioned

CUBA, N. Y. — A new, air conditioned building, now under construction, will provide approximately 16,000 sq. ft. of floor space to be occupied by the research and engineering staff, is being added to Acme Electric Corp.'s facilities here.

"This new building will consolidate all research and engineering in a central unit, where complete laboratory and testing facilities will be available to the engineering groups.

"In addition to the usual instrumentation required for electrical laboratory testing, such special equipment will be available to test products under sub-zero temperature, high heat and humidity conditions, and vacuum and vibrating conditions.

REVIEW of VACUUM for SERVICE ENGINEERS by Saunders & Williams

NEW!

A comprehensive STORY OF VACUUM written specially for SERVICE ENGINEERS!

Contents: Atmosphere and its pressure • Meaning of vacuum; how created, used and measured • High vacuum pumps and their care • Vacuum line size and their effect • Procedure for dehydrating, degassing and leak detection • High vacuum gages • Precision charging.

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Gentlemen: Enclosed is my check or money order for ☐ copies of the "Review of Vacuum" at $4.00 per copy postpaid in the U.S.A. Shipment is to be made immediately.

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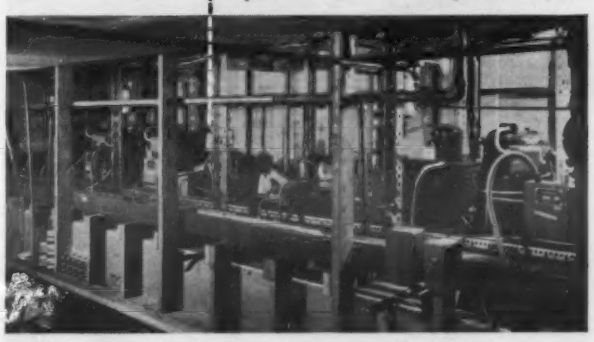
quiet, compact, vibration-free design makes it possible



These ceiling-hung, water cooled Tecumseh units operate a 3-door upright ice cream cabinet, an 11-door upright frozen food cabinet, an 8-door upright beverage case, a 30′ open air curtain case, and a 12′ produce case.

This space-saving installation of remote condensing units, was made possible largely because of Tecumseh's compressor engineering advancements. By eliminating excess weight, every pound of equipment is doing its job . . . allows suspending these units from the ceiling. Of equal importance is the "whisper-quietness" and virtually vibrationless operation of these units, necessary in locating them this close to the traffic below. Along with installation versatility and simplicity, Tecumseh units provide operational economy and unequalled, trouble-free service. You, too, can profit from a Tecumseh installation.

"Excellent performance", states Stan Christensen, the owner of Stan's Super Jet Food Mart, Tacoma, Washington, where this 100% Tecumseh condensing unit installation was made.

"Not a single service call", reports the installer, Jack Frost Company, Inc., also of Tacoma. "The sealed Tecumseh unit has proven its dependability, and we expect to use more of them."

forty million compressors in the field

TECUMSEH PRODUCTS COMPANY

MARION, OHIO
TECUMSEH, MICHIGAN

FOREIGN OPERATIONS DIVISION: Tecumseh, Michigan

CANADA: Tecumseh Products of Canada, Limited, 1667 Dundas St., London, Ont.

Radiant Overhead Heater Provides Spot Heat

● New "Solarflo" radiant overhead heaters are efficient, lightweight units providing quick infrared spot heat for a wide range of applications in industrial and commercial buildings, hangars, garages, lanai, and school and residential patios, according to Solarflo Co., Dept. AH&RN, Box 745, Glendora, Calif.

They are AGA approved for vented heating as well as unvented, according to the company.

"A circular burner head and pilot are enclosed above the saucer-shaped ceramic-coated metal radiating surface, over which the flame is projected horizontally for evenly distributed infrared heat," it was explained. "No fans, motors, or limit switches are used.

"All models feature 100% safety controls and are operated by a 24-volt thermostat or wall switch. Units weigh only 32 lbs. Inputs range from 24,000 to 48,000 B.t.u.h."

Freezer's Upper Deck Displays 36 Packages

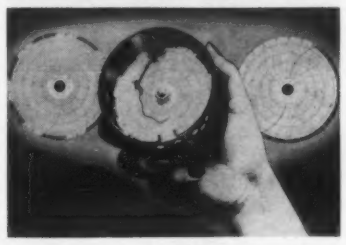
● Introduction of its 1960 "Pace Setter" line of a multi-deck frozen food merchandiser has been announced by C. V. Hill & Co., Inc., Dept. AH&RN, 360 Pennington Ave., Trenton 1, N. J.

"Identified as the model 357-Z, the fixture offers nearly 50% greater cubic display capacity than a standard single deck freezer," the company said. "The upper shelf provides space for more than three dozen additional package facings and is particularly adaptable to the merchandising of high profit specialty items such as complete dinners, frozen pastries, meats, and similar products.

"Features include patented Hill split coil refrigeration system, simplified electric defrost, and fluorescent lighting. Design permits the two-deck model to line up with standard single deck fixtures and two types of adjustable canopy shelving can be placed on the case for the merchandising of related non-refrigerated products."

The new model is manufactured in 8-ft. lengths only.

Recording Thermometer Has Dry Stylus



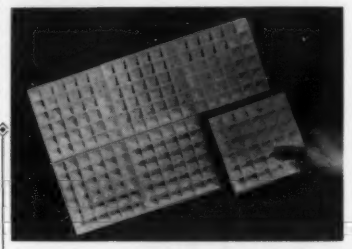
● A low-cost recording thermometer with dry stylus is being offered by Pacific Transducer Corp., Dept. AH&RN, 11836 W. Pico Blvd., Los Angeles 64.

"This thermometer can be used as a highly portable field service unit for recording time and temperature in auto, truck, train, ship, or airplane," the company said. "It is small enough to be packed with the goods being shipped, and will record in any position. For permanent or temporary mounting, it can be used for cold rooms, refrigerators, ovens, curing rooms, etc. For recording temperatures of liquids or wet environments, the instrument may be encased in a thin polyethylene bag."

The thermometer, which uses a spring-wound clock movement, is made in eight different temperature ranges: 20° F. to 220° F., -40° F. to 160° F., -30° F. to 70° F., 40° F. to 140° F., -5° C. to 105° C., -40° C. to 70° C., -35° C. to 20° C., 5° C. to 60° C.

Designated model 585, the thermometer sells for $37.50 f.o.b. Los Angeles.

3 Module Types Snap Into Diffuser Frame



● A new plastic modular diffuser is being offered by Carnes Corp., Dept. AH&RN, Verona, Wis.

"Combinations of three types of modules provide an infinite number of air patterns and sizes—and snap easily and securely into heavy-gauge frames," the company stated. "Modules are high impact and flame retardant material, with color persistency and dimensional stability.

"Diffusers are designed for any type of ceiling construction—new or existing—and are especially adaptable to tile and metal pan suspension systems. Basic diffuser faces are sized to replace one or more standard tiles; and, also, are provided with frame modifications and panel assemblies dimensioned for exposed suspension."

Fan, Limit Controls For Central Heating

● A new line of fan and limit controls for the central heating industry has been announced by Robertshaw-Fulton's Grayson Controls Div., Dept. AH&RN, Long Beach, Calif.

The line includes individual fan and limit controls, and a combination of the two. All include switches incorporating engineering innovations to provide longer field life, and are equipped with "color-coded" switch guards for easy identification, the company said.

"All switches used in the new Grayson line incorporate roller operators for smooth, dependable action capable of trouble-free operation over long periods," it was stated. "This is assisted by a built-in 'no bounce' self-cleaning action. The switches have a rating of ¾ hp., and are protectively enclosed in the controls with a moulded nonconductive covering. The switches also have 'in-line' terminal connectors which are protected by built-in terminal dividers from accidental shorting of the terminal wiring.

"Fixed fan and limit settings are also available in the new controls. To preclude change in settings due to vibration, tabs are provided to secure the levers at a preselected setting. Such fixed settings may be ordered from the factory or made in manufacturing plants by use of a simple bending tool, thus simplifying inventory.

"A manual summer fan switch, which can be installed at the factory, by the manufacturer, or added in the field, is also available."

Engineering the temperature...

WITH RECOLD IN THE LOS ANGELES SPORTS ARENA

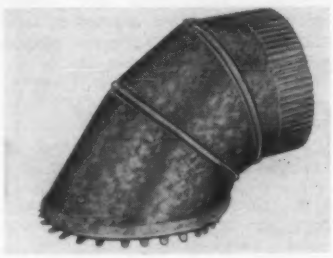
The new 22,400-seat Memorial Sports Arena establishes Los Angeles as the sports capitol of the nation. Recold units supply over 672,800 CFM of heating and air conditioning for this vast building.

RECOLD CORPORATION
7250 East Slauson Avenue, Los Angeles 22, California

RECOLD

Designed by: Welton Becket & Associates, Architects & Engineers
Air-Conditioning Installed by Western Air & Refrigeration, Inc.

Fitting Takes Off from Top or Side

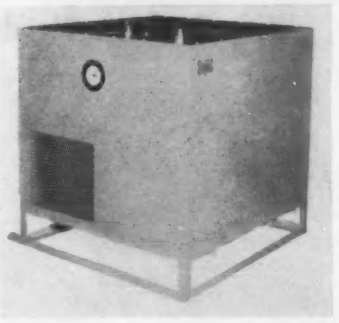


● A new take-off fitting for warm air heating, ventilating, and air conditioning ducts has been announced by Excelsior Steel Furnace Co., Dept. AH&RN, 546 W. Washington Blvd., Chicago 6.

"This fitting is called 'Scotty' because of its low cost and economical installation for new projects or old-house work," the company said. "It is adjustable for use either as a top or side take-off.

"To install, set dividers to radius from punch marks on fitting; scribe circle and cut, insert fitting and bend back, dovetail notches (notches on back of circle are preturned). Fitting has a 7-in. throat and a 6-in. collar."

Dryer Lowers Air Line Dewpoint to 0°F.

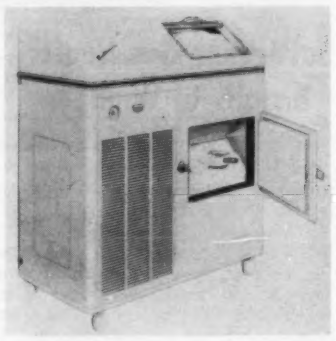


● Development of a portable, self-contained air dryer, in standardized size, designated DHD-20, has been announced by Drayer-Hanson, Special Products Div., Dept. AH&RN, 3301 Medford St., Los Angeles 63.

Basic components of the DHD-20 are two cast aluminum heat exchangers, drip leg, and centrifugal stripper. Unit's physical dimension is 36-in. cube. Frame is all-weld construction. Lines are copper or stainless. Weight of the unit is 700 lbs.

The new product "will automatically lower dewpoint of a compressed air line to approximately 0° F. with a minimum of line pressure drop (less than 2½%)," the company said. A small hermetically-sealed compressor is stated to be the only moving part of the product. Unit is designated for use at ambient temperatures of 40° F. to 140° F.

Scotsman Adds Front Access Door To Cuber

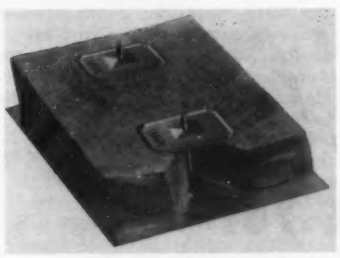


● New convenience in removing flaked ice is offered in the latest Scotsman ice machine in the "Super Flaker SF-3" series, according to Queen Products Div., King-Seeley Corp., Dept. AH&RN, Albert Lea, Minn.

In addition to the usual top access door, Scotsman has added a handy front door, at knee level, it was pointed out. This new feature is said to make it easier to reach ice in the lower half of the bin.

The SF-3 WSFB is the newest model in Scotsman's SF-3 series of nine machines. It has a daily capacity of 1,050 lbs. of flaked ice and a storage capacity of 350 lbs.

Saves Time Attaching Insulation To Metal



● An improved, time-saving method of permanently attaching interior and exterior insulation to metal—called the Omark-Graham "Insul-Pin" stud welding system—has been developed by Omark Industries, Inc., Dept. AH&RN, Portland 22, Ore.

In a simple three-step job, the company said, the new method offers rapid, secure fastening of regular and high temperature insulation to galvanized ductwork, aluminum ducts, industrial furnaces, refrigeration room facings, corrugated iron and steel plate: (1) Omark-Graham pointed Insul-Pins are welded to the metal surface; (2) the insulation is pressed onto the pointed tips of the Insul-Pins; (3) insulating material is secured with push-on Insul-Clips.

Special features include lightweight welding guns and portable welding machines which make it possible to work in cramped quarters and patented stud tip and instantaneous arc insuring no-burn, no-distortion welding, even to thin sheet metal.

One of a series of Gibson messages to all appliance dealers.

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AT GIBSON'S WAIKIKI COLLEGE OF PROFIT!

Here's the "faculty" of Gibson's Waikiki College of Profit, the most respected gentlemen of the business press. Each will be a featured speaker at daily breakfast seminars held during Gibson's September-October convention in Hawaii. These are the men who report on *your* business, the men whose articles *you* look to for guidance in helping you run a profitable business. *Only Gibson* gives you a chance to meet and hear them *first-hand.* Plan now to sit-in on one or more of these profitable round-table discussions, conducted by experts in the appliance field, during Gibson's fabulous *Hawaii by Jet* sales meeting.

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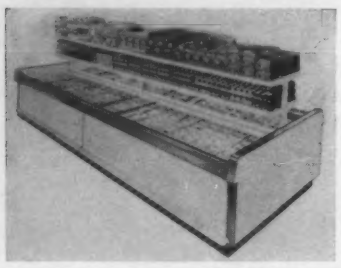
Laurence Wray, *Editor*, Electrical Merchandising Week

WANT TO HEAD FOR HAWAii BY JET?

get going...get Gibson

Gibson Refrigerator Division of HUPP Corporation, Greenville, Michigan

Wide Dual Isle Merchandiser Displays More



● A new "Wide Dual-Isle" low temperature merchandiser for the display of frozen foods and ice cream in island locations has been announced by McCray Refrigerator Co., Inc., Dept. AH&RN, Kendallville, Ind.

A common return air flue down the center of the case divides the display area into two separate compartments. "These compartments furnish more cubic foot capacity of display in 18% less floor space than two wall type cases back to back in an island location, which has been a popular layout in many recent supermarkets," the company claims.

"Other advantages derived from having two merchandisers in one unit are a reduction in capital investment and a saving in installation costs and operating expense." An optional, lighted superstructure with two shelves furnishes an additional 36 sq. ft. of related item display in the 8-ft. case and 54 sq. ft. in the 12-ft. case.

2 Hp. Air Conditioner Is Water Cooled

● Two 2-hp., water-cooled, portable "Kold Wave" air conditioners have been introduced by Heat Exchangers, Inc., Dept. AH&RN, 1749 West Carroll Ave., Chicago 12.

"The units, which weigh less than 150 lbs., operate on 11.5 amp. and 208, 220, or 230-volt currents," it was pointed out. "They have a 26,000 B.t.u. capacity, are water cooled by a special hose kit that accompanies the units, and also come with casters to permit their being moved from room to room. An aluminum filter in the units is removable and washable.

"The units also serve as dehumidifiers and feature centrifugal blowers rather than fans, resulting in a reduction of noise.

"Model K-22D carries a suggested list price of $519.95, while the reverse-cycle heat pump unit with thermostatic control lists at $589.95. The units are cream colored with gold extrusion trim and have light cream plastic grilles."

Corrosion Inhibitor Is Non-Toxic

● "Dearborn 860," a non-toxic corrosion inhibitor for use in both open recirculating and once-through cooling systems where toxic contaminants such as chromate are not permitted by state and local regulations, has been announced by Dearborn Chemical Co., Dept. AH&RN, Merchandise Mart, Chicago 54.

"In the dosages employed, the product will not produce chemical concentrations that exceed public health service standards for potable water," the company said. "Treated blow-down water from cooling towers or spray ponds can be safely discharged into streams without endangering fish or animal life."

According to the manufacturer, Dearborn 860 "provides corrosion protection comparable to that obtained with chromate-polyphosphate combinations, and much superior to the protection realized with ordinary polyphosphates."

Duct Liner Adhesive Is Fire Retardant

● Development of a new non-flammable, fire retardant duct liner adhesive has been announced by Goodloe E. Moore, Inc., Dept. AH&RN, Danville, Ill.

Known as "Tuff-Bond #6," the duct liner insulation adhesive is non-flammable in the wet stage and fire resistant when dry, according to the company. It meets the Interim Federal Standard #00136, the announcement said.

"When wet brushed on metal, the adhesive produces an excellent immediate tack and insulation can be promptly applied," the company stated. "Tack time for the adhesive is from six to eight minutes. It can be shipped in any season and will not freeze. Coverage is approximately 150 sq. ft. per gallon."

Safti-Vent Gas Heater Installs In Window

● New, for 1960, is a sealed "Safti-Vent" gas heater that installs in a window, according to H. C. Little Burner Co., Inc., Dept. AH&RN, San Rafael, Calif.

The factory-assembled unit does not become part of the house and may be removed when desired, it was noted. The heater is aimed at home modernizers and renters.

"Called the Safti-Vent Hawaiian model, this window unit operates with Safti-Vent's sealed burner in which gas flame and pilot burn in a chamber completely sealed away from room air," the company explained. "A built-in vent admits oxygen from outdoors and releases products of combustion directly outdoors.

"Hawaiian model Safti-Vent has a 20,000 B.t.u. capacity, operating in a cabinet 10 in. by 18 in. by 26 in. Vent is integral with cabinet. Model is approved for use with natural, manufactured, mixed, or propane gases and cabinet is finished in two-tone harmonizing decorator colors. Built-in blower is available as an optional extra.

"Installation is quick and simple. The Hawaiian cabinet rests on the window sill. Lower window frame fits snug on the cabinet top. With the 26-in. wide unit, extra window space is sealed by applying strips to fill. These filler strips are provided with the heater. Gas connection may be drawn from either the outside or inside."

Brilliant Fire is years ahead!

Vent-O-magic Sealed Heating

A.G.A. APPROVED

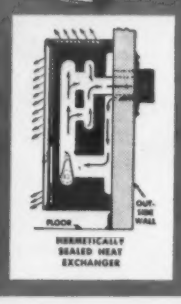
17,500 BTU RATING

COMPLETELY AUTOMATIC

Here's HEATING MAGIC for use on any outside wall . . . it—the popular 17,500 BTU rating. No chimney required—no unsightly vents or ducts—suitable for installation in walls up to 24 inches thick. The Safety-Sealed Exchanger means that the warm-air stream is clean, odorless, safe . . . with low-level, broad band delivery. Fully automatic . . . Thermostat plus 100% Safety Shutoff in case of gas failure; and radiating surfaces are "dimpled" to muffle thermal noises. Fully A.G.A. tested and approved.

LUXURY FINISH is of durable, lustrous baked enamel . . . easily kept clean. The cabinet is in beautiful COPPERTONE color, the panel in complementing CAPE color.

NO CHIMNEY NEEDED!



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3-WAY SOLENOID VALVE

for flow control of hot or chilled water with fan-coil units

This New addition to the J-E Line provides—

- Economical temperature control.
- Separable solder flange for easy installation.
- One size for ½ to 10 gpm for simple selection

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J-E Controls Division

JACKES-EVANS MANUFACTURING CO.

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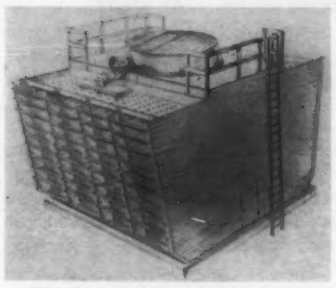
What's New

Cooling Tower Expands Marley Range



● An addition to its "Double-Flow Aquatower" line has been announced by The Marley Co., Dept. AH&RN, 222 West Gregory, Kansas City 14, Mo.

The company said the addition extends the capacity of the line to meet the water cooling requirements of major air conditioning and industrial process cooling applications. Designated the Series 15 Double-Flow Aquatower, this new tower bridges the capacity gap between the standard line of Double-Flow Aquatowers and unlimited capacity Marley industrial cooling towers, it was stated.

The Series 15 design is said by Marley to combine many of the proven features of both Double-Flow Aquatowers and Marley industrial cross-flow towers. Included in the Series 15 design from the industrial towers are: sloping louver walls and broad louvers, and glass reinforced polyester filling supports for permanent alignment, locating of splash bars.

"From the basic Double-Flow design the Series 15 utilizes open gravity water distribution system, minimum height in relation to capacity, low pumping head, safe inspection and maintenance," Marley stated. "New components, supplied as standard equipment include: combined mechanical equipment support and hot water lateral, flow control valves and external lube lines on gear drives. Water distribution arrangement permits several piping options including concealed internal piping and either sidewall or endwall risers."

Edge Mounted Latch Won't Catch Clothes

● Introduction of a new edge-mounted latch engineered specifically for commercial refrigerated applications has been announced by National Lock Co., Dept. AHRN, 1902 Seventh St., Rockford, Ill.

The latch features a modern design with handle end curved to prevent "clothes catching" on behind - the - counter applications, the company said. It may be used for either right - hand or left-hand doors. Its roller bolt action already has been field tested on similar latches for more than 20 years, according to the manufacturer.

Truck Refrigeration Unit Weighs 376 Lbs.

● Weighing only 376 lbs., the compact model C-10-B Hunter refrigeration unit is a heavy-duty model especially designed for the efficient maintenance of temperatures for products 30° F. or above, according to Hunter Mfg. Co., Dept. AH&RN, 30525 Aurora Rd., Cleveland 39 (Solon), Ohio.

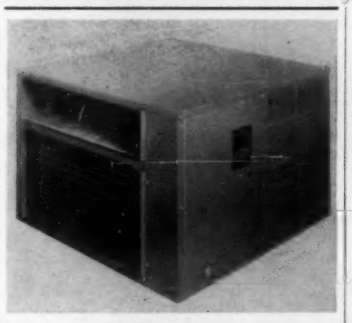
"Capacity-wise this model can be employed in adequately insulated bodies up to 18 ft. long," the manufacturer stated. "The unit is also available (as model CE-10-B) with a.c. electric standby power for dockside or over-night operation."

Powered directly by the truck engine, the model C-10-B consists of a self-contained "factory package" that contains all components, except the compressor. This package is designed for mounting through a prepared opening in the upper front wall of the truck body.

The high-speed automotive-type compressor mounts on and is driven by the truck engine, by a V-belt from the crankshaft. Flexible refrigerant hoses and connections are supplied.

"Evaporator and condenser fans are powered by a 12-volt, ¼ hp. a.c. motor with heavy-duty ball bearings and replaceable brushes," it was pointed out. "This electric motor drives both the evaporator and condenser fans continuously at a constant speed. It receives its power from the vehicle's generator.

"A manual 'on-off' switch is supplied on the unit so that when refrigeration is not required the unit can be turned off," according to the manufacturer.



Payne Adds Electric Heat Pump Models

● A new series of heat pump air conditioning models will be added to the present line of residential and commercial self-contained and remote-type air conditioning units being marketed by The Payne Co., Dept. AH&RN, Box 2222, La Puente, Calif.

These all-electric models units will be ARI-approved at rated standards and will include such features as a weather resistant finish, new design aluminum coils, central control junction box, heavy insulation, over-sized filter-drier, service valves, thermal expansion valves. and high pressure control, according to the company.

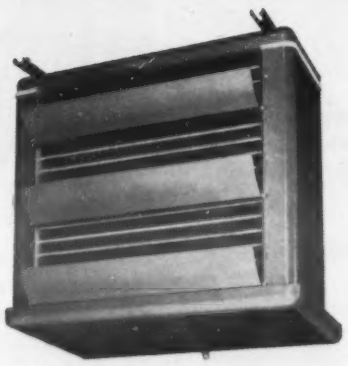
"Accessory strip heater packages are being offered as optional equipment to facilitate heating loads required in areas with lower winter temperatures," it was noted. "Extra heat supply operates under more extreme temperatures since unit will supply sufficient heat under normal climatic conditions according to rated capacities."

Electronic Combustion Analyzer Saves Hours

● Using the "Veco" electronic combustion analyzer, furnace installation and servicemen are able to obtain maximum heating efficiency on any type of oil, gas, or coal furnace, with a savings of many man hours of labor, claims Victory Engineering, Dept. AHRN, 600 Springfield Rd., Union, N. J.

The analyzer is accurate and fast, with a direct reading time of less than 10 seconds, according to the company. Analysis is provided through the measurement of CO_2 content of flue gas, stack temperature, and draft over fire and all three measurements are made with one instrument, with a single meter and a single dial with three-scale read-out, it was stated.

The analyzer is available in two models, the domestic model 140A and the heavy-duty industrial model 140C.



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Service Cart Designed for Systems Using Either Refrigerant-114 or 12

DUAL-PURPOSE refrigerant service cart, developed by The Garrett Corp.'s AiResearch Mfg. Div. of Los Angeles, services air conditioning systems using either Refrigerant-114 or 12.

To Demonstrate Cart At Several Major Airline Facilities

LOS ANGELES — A nationwide demonstration tour of a refrigerant service cart designed to service air conditioning systems using either Refrigerant-114 or 12—is now being scheduled by The Garrett Corp.'s AiResearch Mfg. Div. of Los Angeles.

Demonstrations are planned for several major airline maintenance facilities where servicing is performed on Boeing 707, Douglas DC-7 and DC-8, Convair 880, and the Lockheed Electra aircraft.

"Purpose of the demonstration is to show how the AiResearch cart provides efficient, simplified servicing operation in purging, recharging, and leak detection of air conditioning systems," the announcement said.

Already, nine airlines have ordered 32 service carts, it was reported.

"Using the dual-purpose cart, air conditioning systems are evacuated to 100 microns of mercury pressure, removing all trapped moisture in the system," it was explained.

"While checking motor thermal protection, the service cart simultaneously dehydrates the compressor group. It then purges the system with dry nitrogen, adds lubricants by measured volume, and then recharges the refrigeration system with a measured volume of refrigerant."

DISTRICT SERVICE MANAGER

Leading manufacturer of household appliances requires a Field Service Representative.

Major appliances service experience necessary. Applicant must be willing to travel and experienced in training service personnel.

Distributor experience desirable. Must have pleasing personality.

In confidence submit resume of Education, Experience and Earnings.

Box A6560,
Air Conditioning, Heating & Refrigeration News.

'Pipe Motion Specialists'

Flexonics Program Designed To Help Plants Avoid High Maintenance Cost

MAYWOOD, Ill. — Flexonics Corp., a subsidiary of Calumet & Hecla, Inc., announces a new marketing approach to the sale of its metal hose line to industry.

The symbol "PMS" for "Pipe Motion Specialists" will be used to identify the authorized industrial distributors through which Flexonics will offer the program.

"Basically the PMS approach to the common piping problems that exist in most every plant will be a creative one—designed to quickly and economically correct these ills," it was explained.

"The application of flexible metal hose will center around correcting for piping misalignment, vibration, shock, thermal growth, piping space problems, random and reciprocating motion."

It was pointed out that "many piping problems have been passively accepted, without any real effort on the part of industry to investigate their possible elimination. The PMS program is geared toward approaching industry and not waiting for industry to approach it.

"The result will be that industrial plants will avoid many of the high maintenance costs, from simple valve damage on up, that are commonly caused by piping problems. Rising operating and maintenance costs make PMS most timely."

Flexonics sales-engineers are training industrial distributor salesmen to be "Pipe Motion Specialists." The distributors will be equipped to weld and braze locally—thereby reducing delivery time for complete assemblies—of which the major product need is composed, it was stated.

Before introducing the program nationally, Flexonics has been testing the Pipe Motion Specialist program approach in a few selected markets.

"The results indicate that PMS is going to contribute substantially to a reduction of in-plant maintenance costs, and aid the industrial distributor to realize his full capabilities for creative sales and service to the plants in his area," the company said.

One in a series of interviews with the men who are "Virginia"

"Proper application of chemicals to control scale helps maintain operating efficiencies—prolongs equipment life—prevents costly emergency repairs"

Peter Eustis, Water Chemicals Product Manager, Virginia Smelting Company

Pete Eustis, head of the Water Chemicals staff at "Virginia," discusses the advantages of chemical scale and corrosion control, a service now offered by many refrigeration contractors.

Q Is it a difficult matter to add water treatment as a customer service?

A No, sir. Only a few items of inexpensive equipment are needed. Chemicals for the control of scale and corrosion are readily available—methods of application are relatively simple and can be easily learned.

Q Are there "Virginia" Water Chemicals to correct most of the problems encountered?

A Yes! You'll see them listed on the opposite page. "Virginia" has invested a great deal of research in the development of these products and has made them conveniently obtainable from nearby wholesalers. High quality, plus careful teaching of application methods, has contributed importantly to their success in the field.

Q Who do you think benefits most from water treatment service?

A Well, I'd say the equipment owner does. His equipment works better, lasts longer, and costs him less to operate. But the service organization profits too. Water treatment servicing provides an on-and-off season business, stabilizes income, and helps retain a full staff the year round.

Q Can a contractor or service company interested in adding this service get assistance from "Virginia"?

A Yes. For example, laboratory assistance in the form of water and scale analysis and treatment recommendations based on these analyses are provided free. Then there's literature for direct-mail promotion, service record forms, instruction manuals, all furnished without cost. Appointments with "Virginia" field engineers can be arranged to conduct actual demonstrations or to help with the really tough situations that sometimes develop.

Pete says, "*If you have a question about any phase of servicing water-cooled equipment, please drop us a line.*"

For free folder, "How to Turn Water into Money," write Refrigeration Division, VIRGINIA SMELTING COMPANY, 175 Jefferson St., W. Norfolk, Va.

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PRESSTITE TAPE • PERMAGUM • SUNISO REFRIGERATION OILS
NATIONAL SALES AGENT & REPACKER FOR DU PONT'S "FREON" REFRIGERANTS

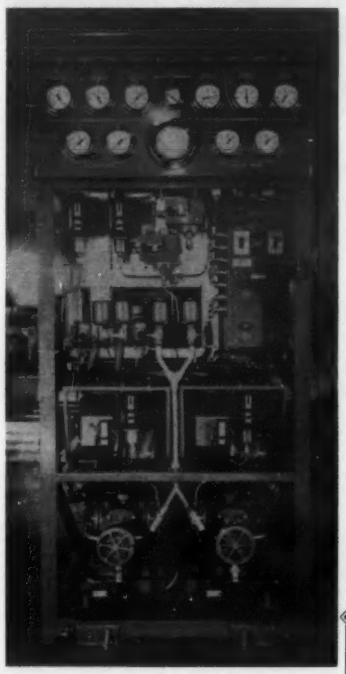
Walter Campbell, D. C. Contractor, Moves

WASHINGTON, D. C.—A recent open house marked the relocation of the offices and warehouses of the Walter E. Campbell Co., Inc., insulation contractor and distributor, to 1235 Kenilworth Ave., N.E., Washington, D. C.

The firm has been awarded the contract for insulation of heating, plumbing, and air conditioning systems in the new building going up for the Smithsonian Institute, it was reported.

The new facilities for the company, a distributor of Johns-Manville insulations, consist of 11,000 sq. ft. of warehouse space, plus 2,000 sq. ft. of office space. The building is served by a railroad siding located in the rear and three truck docks.

Reduces Compressed Air to −40°F.



REDUCTION in air temperature to -40° F. is part of the process of supplying clean, dry, compressed air for process and research purposes in a dehydration cabinet developed by the Pathfinder Co., London, England. The dehydration function is performed by a compressed air-to-refrigerant heat exchanger capable of delivering over 12 hours of continuous air supply at -40°. The condensing unit uses "Arcton-4" (R-22). The unit defrosts by reverse cycle. The refrigeration unit is in duplicate. Automatic cycle provides for alternate six-hourly periods of operation by each unit. To assure proper conditions at all times, the second side starts up some 10 minutes before the operating unit shuts down. This system allows over 5 hours of defrost time, although only one hour is normally required. In case of a failure of either unit, the other will operate for 12 hours without needing defrost. Reduction of the air temperature to -40° and reheating to approximately 70° results in a relative humidity of 0.64 at the outlet of the machine, at 15 p.s.i.g. An air compressor and filter unit, together with the refrigeration machinery, provide the clean, dry air needed in such applications as film-drying cabinets, clinical and hospital uses, dehydration—during manufacture—of refrigeration components. The unit is mounted on a portable cabinet which occupies less than 3 sq. ft. and is less than 72 in. tall.

Riverside Completes Addition Of 25,000 Sq. Ft. to Marion Plant

DETROIT — H. N. Brodsky, chairman of the board of Riverside Electrical Mfg. Co., manufacturer of wiring harnesses and electrical assemblies for the appliance and automotive industries, announced that Riverside's expansion program at Marion, Mich. has been completed.

A 25,000-sq. ft. addition approximately doubles the size of the physical plant, it was stated.

The Marion Chamber of Commerce raised a sizable fund to aid Riverside in the expansion program. It was presented as an outright gift to the company, according to A. W. Roach, president of Riverside. The fund was donated by 34 local businessmen who realized the importance of the Riverside factory to the community, he said.

Although the new addition will be used primarily for storage at the present time, it will allow 5,000 sq. ft. of storage space in the main building to be converted for production and will give the factory a potential of 75 more employes, thus enabling Riverside to better serve their customers, Brodsky added.

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VIRGINIA SMELTING COMPANY
175 Jefferson St., West Norfolk, Va.

VIRGINIA® Chemicals

Available in Canada and many other countries

Panel Utility Truck Bodies Designed For Heating, Cooling Service Work

ONE OF THREE panel bodies made by Reading Body Works for American Furnace Co.

READING, Pa.—A fleet of three panel utility bodies, job-planned for maintenance and service of heating and cooling equipment, has been acquired by American Furnace Co., St. Louis, it was announced by Reading Body Works, Inc. here.

Manufactured by the local firm, the bodies were mounted on half-ton Ford chassis by Reading's area distributor, Ill-Mo Bus & Equipment Co., St. Louis.

"A major feature of the Reading body is its six built-in storage compartments, equipped with removable shelves and adjustable tray dividers which permit segregated, mix-proof storage of parts and tools—all at finger-tip reach," the announcement pointed out.

"Shelves and dividers can be rearranged without tools to suit the serviceman's daily work requirements. All of the compartments are weather-tight, and equipped with recessed, slam-action pilfer-proof locks. When lowered, horizontal compartment doors serve as on-the-job worktables.

"The panel utility body provides a sheltered working area for personnel and additional undercover storage space for heavy rolls of tubing, large pipes, and bulky equipment. The bodies supplied to American Furnace Co. also have an overhead ladder-rack mounted on the roof.

"Reading's unitized body construction features include heavy-duty steel safety-tread floor and rear step-bumper, and full length continuous hinges with rust-resistant stainless steel hinge pins on all doors. The body is electric-welded. Complete undercoating of the understructure is a standard feature."

Madden Issues Two Product Catalogs

AURORA, Ill.—Madden Brass Products Co. here has released two new catalogs that include new products added to the Madden line.

The No. R460 Refrigeration and Air Conditioning Catalog lists a complete line of flare tube fittings and, in addition to such items as hermetic port valves, color coded charging lines, driers, strainers, capillary tubing, and automotive refrigerant dispensing kits, it also shows all of Madden's recently-introduced products such as the new "tamper proof" tube piercing valve, small general purpose valves, testing outfits, thread sealer, etc.

A 40-page Industrial Catalog, No. 160, introduces the new line of Madden general purpose valves for industry, and presents the wide range of other Madden industrial products: flare fittings, shut-off valves, drain cocks, tube working tools, brass pipe fittings, and others, according to the announcement.

Free copies are available from the company.

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TECH CENTER

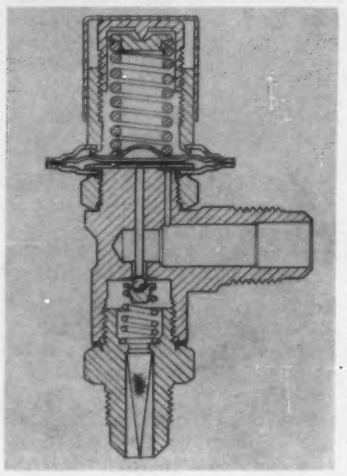
by Frank J. Versagi, Technical Editor

Metering Devices

(2) Automatic Expansion Valve

In a capillary system, it is chiefly the length of the tube which restricts refrigerant flow. Fundamentally, both the automatic expansion valve and the thermostatic expansion valve are **orifice devices.** A hole restricts refrigerant flow, and the metering is accomplished by varying the apparent size of the hole with a tapered needle or some similar device.

Structurally, an automatic expansion valve consists of a body with inlet and outlet connections for the refrigerant, a flexible member—either a diaphragm or a bellows—with an attached needle, and a spring or



springs to help give the equivalent opening and closing pressures needed under operating conditions.

Liquid refrigerant flows into the space below the orifice so the pressure in this chamber is essentially high side pressure, less any line pressure drop. Because of the small area of the needle or valve seat, there is relatively little force pushing upward on the needle. (Force equals pressure-times-area.)

Evaporator pressure is connected to the valve and acts on the diaphragm or bellows through the outlet connection to the cooling coil. When the evaporator pressure rises, the flexible element moves and the attached needle valve reduces refrigerant flow. When the suction pressure drops, the opening spring will move the needle in the direction which opens the orifice more and allows more refrigerant to flow.

In some automatic expansion valves, there is a spring which works to open the valve as well as a spring which works to close it. In such a valve, the combined forces of the evaporator pressure and closing spring act to counter the opening spring pressure.

When the condensing unit is off, no refrigerant passes through the valve (except as described later). When the unit starts, as low side pressure decreases, the valve opens and allows more refrigerant to flow into the evaporator. Saying it another way, **the automatic expansion valve is sensitive to its outlet (evaporator) pressure and opens when that pressure reaches a design point. Inlet, high side, pressure has almost no effect on the opening or closing because of the very small needle area against which it acts in the valve.**

As a result of these factors, the automatic expansion valve tends to hold evaporator pressure constant when the unit is running, and for this reason is more properly termed a constant-pressure valve.

While metering the flow of liquid refrigerant during compressor operation, the needle normally floats, never being completely closed or open. The action of the valve is to spray the refrigerant into the evaporator, so the evaporator is not filled with liquid and is called a dry evaporator. An expansion valve cannot flood the low side while the compressor is running because as soon as the evaporating refrigerant vapor reaches the end of the cooling coil, the motor control bulb located there will cool and cut out the motor. With the compressor off, the valve immediately shuts off the refrigerant flow.

Unlike the capillary tube which needs a balanced charge to operate properly, the automatic expansion valve can operate independently of the amount long as there is enough refrigerant to feed the valve and evaporator.

Like the capillary, the automatic expansion valve is best suited for applications where the load is relatively constant. Being used less and less, it is now found chiefly in such items as water coolers, some hermetic room air conditioners, as a pilot valve for large suction pressure regulators.

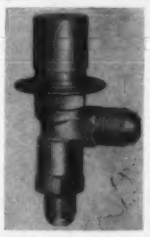
The reason for its limitation to constant loads can be attributed to its dependence on suction pressure for operation. Suction pressure in a system tends to rise only when the load increases.

If suction pressure is constant, the unit capacity is constant. Since it tends to maintain a constant pressure in the evaporator, the automatic expansion valve also tends to keep the compressor operating always at the same capacity.

The valve does this in spite of any actual load changes; therefore it is not suitable for units operating under continually changing loads. On an air conditioner controlled by a room temperature thermostat, the valve may be used since the compressor is either running at full capacity or it is not running. Where capacity control is necessary, however, the automatic expansion valve is not applicable.

For related reasons, constant pressure valves cannot be used on two coils connected to the same compressor, since pressure equalization through the suction line would prevent individual control by each valve.

When used on variable load applications, the automatic expansion valve will tend to starve



the evaporator at high load, overfeed it at low load.

Like the capillary, the automatic expansion valve system must have thermostatic motor control. In fact, the valve is a good replacement for a capillary on a field repair, since it is adjustable within a range and the charge is not critical. **If the motor on such an installation is the typical low starting torque motor used on cap jobs, it will be necessary to use a "bleed type" automatic expansion valve.** This is one with a calibrated notch cut in the valve seat which allows a slow leakage of refrigerant and provides the unloading characteristic of a cap tube during the off cycle.

The adjustability of the valve is a decided advantage over the capillary, since it allows the operator to make whatever setting is needed to maintain the temperature difference between the coil and the area being cooled—with a thermostat controlling the condensing unit.

This article is based in large part on information contained in TRANE AIR CONDITIONING MANUAL and in MODERN REFRIGERATION & AIR CONDITIONING — Althouse & Turnquist.

file guide—AUTOMATIC EXPANSION VALVE: metering devices

Next: THERMOSTATIC EXPANSION VALVE:

General Chemical Names Marvin S. Meirowitz

NEW YORK CITY—Appointment of Marvin S. Meirowitz as field sales manager for "Genetron" refrigerants and aerosol propellants at Allied Chemical's General Chemical Div. has been announced by James P. Farrell, vice president.

Meirowitz's territory will cover the New York metropolitan area. He has been with the division five years, as a "Genetron" salesman.

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- **changing territories**
- **expanding your territory**
- **taking on new lines—**

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In addition to the above features, you will find the GOLD SEAL LINE TAP VALVE cannot vibrate loose; will not distort the tubing and has no top heavy assembly. It requires minimum space and is tamper proof. Use with GOLD SEAL CONTROL VALVES CV-1G or CV-2G.

GOLD SEAL SWIVEL TOP CONTROL VALVE

Designed to operate all Line Tap, Line Port, Can Tap and Access valves, the Gold Seal Control Valve incorporates a swivel top, adjustable to an easy working position. Use part CV-1G (single port valve) or part CV-2G (double port valve).

For additional information, see your wholesaler or write to Dept. No. N-16

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Plant Vacation Schedule

Shutdowns Starting June 25 or Later

This is the second in a series of handy guides to summer vacation or inventory shutdown schedules announced by manufacturers. It is published to help salesmen avoid useless calls and to assure purchasing departments of adequate stock on hand. CLIP and SAVE for future reference.

Company	Shutdown Period Plant	Office	Shipments From Plant
Tuck-Aire Furnace Co., San Francisco (Air Conditioning Div. will be in full operation)	6/25-7/11	6/25-7/11	Stock Only
Acme Electric Corp., Cuba, N. Y.	7/1 -7/17	Open	Stock Only
Beach Russ Co., New York City	7/1 -7/17	Open	Regular
Drayer Hanson, Div. of Crane Co., Los Angeles	7/1 -7/17	7/1 -7/17	Emergency, Stock Only
Flexible Tubing Corp., Guilford, Conn.	7/1 -7/10	7/1 -7/10	Emergency
Roy Follett Corp., Phillipsburg, N. J.	7/1 -7/10	Open	Stock Only
HERRmidifier Co., Lancaster, Pa.	7/1 -7/10	7/1 -7/10	None
Holly-General Co., Pasadena, Calif.	7/1 -7/18	Open	Stock Only
Mayflower Air-Conditioners, Inc., St. Paul	7/1 -7/10	7/1 -7/10	Emergency
Minneapolis-Honeywell Regulator Co., Minneapolis, Chicago, Wabash, Ind.	7/1 -7/17	7/1 -7/17	Emergency
Gardena, Calif.	7/1 -7/17	7/1 -7/17	None
Riverside Electrical Mfg. Co., Dearborn, Mich.	7/1 -7/8		Emergency
Taco Heaters, Inc., Cranston, R. I.	7/1 -7/17	7/1 -7/17	Regular
Aerovox Corp., New Bedford, Mass.	7/2 -7/17	7/2 -7/17	
Furnas Electric Co., Batavia, Ill.	7/2 -7/18	Open	Regular
Handy & Harman, Chicago, Los Angeles	7/2 -7/17		
Howard Industries, Inc., Racine, Wis.	7/2 -7/18	Open	
Howard Refrigerator Co., Inc., Philadelphia	7/2 -7/10	Open	Emergency, Parts Only
Jackes-Evans Mfg. Co., Controls Div., St. Louis	7/2 -7/10	7/2 -7/10	Regular
Air Filter Corp., Milwaukee	7/3 -7/10	Open	Emergency, Stock Only
Koch Refrigerators, Inc., Kansas City	7/3 -7/10	Open	Regular
Mueller Climatrol, Milwaukee	7/3 -7/10	Open	Emergency, Stock Only

These Plants Are Staying Open

The following plants have informed the NEWS that they follow staggered vacation schedules or have no plans for closing at any time during the summer. Companies marked with * will close for vacation or inventory in the fall or winter. Dates will be given later. An earlier list appeared in the June 6 issue.

Flexaust Co., New York City.
Henry Valve Co., Melrose Park, Ill.
Highside Chemicals, Inc., Clifton, N. J.
Hi-Lo Valve Mfg. Co., Oklahoma City.
Imperial Brass Mfg. Co., Chicago.
Inland Mfg. Div., General Motors Corp., Dayton.
International Automotive Air Conditioning, Inc., Ft. Lauderdale, Fla.
Karmazin Products Corp., Wyandotte, Mich.
Laurel Products, Inc., Laurel, Miss.
***Lindustries, Inc.**, Fort Worth, Texas.
Madden Brass Products Co., Aurora, Ill.
Majestic Co., Inc., Huntington, Ind.
McCord Corp., Detroit.
McMillan Heat Pumps, Inc., Jacksonville, Fla.
McQuay, Inc., Minneapolis.
Modern Machine Works, Inc., Cudahy, Wis.
Morrison Products, Inc., Cleveland.
Owens-Corning Fiberglas Corp., Toledo.
Patterson-Kelley Co., Inc., East Stroudsburg, Pa.
Peerless Electric Co., Warren, Ohio.
Penn Brass & Copper Co., Erie, Pa.
Pennsylvania Engineering Co., Philadelphia.
Perlick Co., Inc., Milwaukee.
Presstite Div., American-Marietta Co., St. Louis.
Pyramid Instrument Corp., Lynbrook, N. Y.
Quincy Products Co., Quincy, Mich.
Recold Corp., Los Angeles.
Recony Sales & Engineering Corp., Richmond, Va.
Redmond Co., Inc., Owosso, Mich.
Refrigerating Specialties Co., Chicago.
Research Products Co., Madison, Wis.
Rheem Mfg. Co., Chicago.
Ross-Temp, Inc., Chicago.
Rotary Seal Div., Muskegon Piston Ring Co., Sparta, Mich.
Schaefer Brush Mfg. Co., Inc., Milwaukee.
Schnacke, Inc., Evansville, Ind.
Silco Products, Inc., Fountain Inn, S. C.
Skuttle Mfg. Co., Milford, Mich.
Slant/Fin Radiator Corp., Richmond Hill, N. Y.
Smith Corp., Tipp City, Ohio.
Sporlan Valve Co., St. Louis.
Superior Valve & Fittings Co., Pittsburgh.
Texas Products Mfg. Co., Waco, Texas.
Titus Mfg. Corp., Waterloo, Iowa.
***Tyler Refrigeration Corp.**, Niles, Mich.
Typhoon Heat Pump Co., Tampa, Fla.
Union Carbide Chemicals Co., New York City.
Universal Diffuser Corp., Tuckahoe, N. Y.
Vibration Mountings, Inc., Corona, N. Y.
Henry Vogt Machine Co., Louisville, Ky.
Wagner Tool & Supply Corp., Hialeah, Fla.
Walton Laboratories, Inc., Irvington, N. J.
Warren Co., Inc., Atlanta.
Waterloo Register Co., Inc., Cedar Falls, Iowa.
Weatherhead Co., Fort Wayne, Ind.
Weber Showcase & Fixture Co., Inc., Los Angeles.
Welbilt Corp., Maspeth, N. Y.
Welbilt Heating & Air Conditioning Corp., Farmingdale, N. J.
Western Supply Co., Mfg. Div., Hutchinson, Kan.

THE HEAT PUMP— A TOTAL LOOK

The demand for the material contained in the Heat Pump Issue has been so great that Technical Editor Frank J. Versagi has compiled a Heat Pump Handbook containing the material from the Heat Pump Issue plus new information gathered since the original issue in September.

Here is an opportunity to add to your technical library a comprehensive current evaluation of the heat pump—its market, its potential, its problems, and its successes and failures.

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- INSTALLATION case histories
- COMPRESSORS
- MIRACLE REFRIGERANT?
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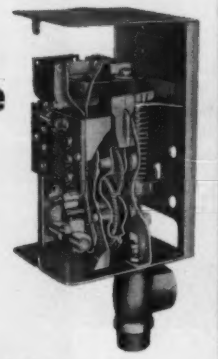

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FREE....70 page design handbook on single and multi-zone hot water baseboard heating systems.

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Barn-Like Egg House Doubles Egg Sales for Supermarket

RISING CURTAIN of refrigerated air chills eggs yet gives customer complete freedom of choice in attractive "Egg House" at Mars Supermarket in Baltimore.

BALTIMORE — A refrigerated "Egg House" which permits shoppers to see the entire assortment of eggs has more than doubled the sales volume for the Mars Supermarket here, it was reported.

The Egg House is constructed of sheet metal and glass. It has been constructed to resemble a miniature barn complete with weather vane and a crowing rooster on the rooftop. The entire unit measures 4 ft. square and 8 ft. high.

The compressor is located in the bottom portion which is concealed with sheet metal siding. The upper section is the storage area for the eggs, and this is glass enclosed so that shoppers can see the entire variety. This area is self-illuminated which adds to its attractiveness.

"Cooled air, between 45°-50° F., circulates freely throughout the entire storage space area," says general manager, Vincent D'Anna. "A 'curtain' of cool air rises at the front of the case which contains the coolness within. The glass enclosure is only three-sided so that customers can easily reach in and extract the cartons of eggs desired."

The Egg House can hold six crates of eggs in cartons. Each variety is individually stacked and price-marked. The display unit is painted red and striped to resemble bricks which makes it that much more attractive to store traffic.

"Before we used this display case, the highest total of eggs that we ever sold was 138 crates in a one-week period," says D'Anna. "Now, our sales never fall below 200 crates, and we average approximately 213 every week during the year."

The Egg House is located on a gondola end which faces the meat department. This gives it heavy traffic and its own appearance is an eye-catcher. Additional eggs are stored in the dairy refrigerated case from which they are extracted and re-filled into the Egg House as the demand requires.

AIR CURTAIN COOLER announced by C. V. Hill & Co., Inc. can be installed as independent unit in existing coolers or used with standard Hill walk-in.

C. V. Hill Adds 'Air Curtain Cooler' Manufactured In 8, 12 Ft. Lengths

TRENTON, N. J.—C. V. Hill & Co., Inc. announced the addition of a new "Air Curtain Cooler" to its line of refrigerated merchandisers.

Designed to match the general styling of its "Pace Setter Color Blend Series" of wall fixtures, the Air Curtain features 4-ft. wide rear loading doors; complete shelf adjustability with 1-in. spacings; a dual refrigeration system for more uniform temperatures at all display levels, and interlocking baffle pans to eliminate cleaning and drainage problems caused by leaking milk cartons.

The unit is manufactured in both 8-ft. and 12-ft. lengths and is available for use with the standard Hill metal cooler or can be installed as an independent unit in existing coolers.

Dairy Industries 'Showcase 60' Set for Chicago Oct. 31—Nov. 5

CHICAGO — "Showcase 60 — Products — Methods — Profits" will be the theme of the 22nd Dairy Industries Exposition Oct. 31-Nov. 5 in the International Amphitheatre here.

Announcement of the theme was made by R. O. Davison, Kelco Co., president of the biennial exposition's sponsoring organization, Dairy Industries Supply Association.

In this "Big Show" of dairy industrial supplies and equipment, some 400 companies will present displays. Arrayed for inspection by an expected 25,000 dairy industry men and women will be such products as storage and refrigeration equipment, freezers, and farm milk tanks.

In conjunction with the exposition, eight national and international dairy industry organizations have scheduled meetings in Chicago. Between Oct. 27 and Nov. 4, conventions or other gatherings will occur of:

Dairy Society International, Dairy Suppliers' Foundation, Evaporated Milk Association, International Association of Ice Cream Manufacturers, International Association of Milk and Food Sanitarians, Milk Industry Foundation, National Association of Retail Ice Cream Manufacturers, and National Ice Cream Mix Association.

Admission to the exposition is free of charge for all dairy processors, dairy manufacturing educators and students, public health officials, and sanitarians.

Frozen Penguin, Anyone?

BALLY, Pa.—Citing unusual applications of its all-metal walk-in freezers, Bally Case & Cooler, Inc. said a 4-ft. by 6-ft. walk-in was used for preserving whole frozen penguins at the McMurdo Sound Base in Antarctica.

This has been the location and working grounds for a scientific staff of the Natural History Museum of Stanford university, California.

In addition to penguin storage, the walk-in has been used to preserve snow for glaciological studies, as well as rocks at below freezing for "dating" studies by Dr. E. Zeller of the University of Kansas. The Bally freezer was also used for preserving blood serum of seals.

Earlier the walk-in was used to store surplus frozen foods.

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Detroit Serves as Gibson Test Area For Product Quality Control Effort

GREENVILLE, Mich. — Another further testing device to better control the quality of its products has been inaugurated by the Gibson Refrigerator Div., Hupp Corp., according to C. M. Tipton, vice president in charge of operations.

Tipton said that Detroit has been set up as a representative test area for Gibson products.

"Each day copies of any service calls made on Gibson merchandise will be sent direct to the Gibson factory for immediate review by their chief quality control manager and head manager of process and specification engineering," it was explained.

"A monthly review is to be made by these factory executives with both the service manager from their Detroit distributor and the serviceman who made each individual call, to determine if corrective manufacturing steps are necessary."

It is anticipated that this new system will speed up the spotting of opportunities to increase product quality at least four months over the normal industry practice, Tipton said.

Detroit was chosen as a representative test area for two reasons, Tipton stated. First, it has a representative ratio of each of Gibson's product lines (refrigerators, freezers, room air conditioners, ranges, and dehumidifiers).

Second, last year Detroit's Gibson distributor (Peninsular Distributing Co.) was the largest Gibson wholesaler in the country, so there is a strong concentration of Gibson merchandise in the area.

Tipton stated that this new process is designed to get field reaction to the performance of Gibson products. He did not anticipate that similar programs will be arranged in other areas of the country.

New Plant Will Streamline Controls Co. Production, Allow for Future Expansion

MILWAUKEE — Controls Co. of America, in a bid to streamline the manufacture of its heating and air conditioning controls and provide for future expansion, has contracted to acquire a former Chain Belt Co. ordnance plant—and adjoining land—in the Milwaukee area, George Becker, Controls Co. vice president-operations, announced.

The former Chain Belt ordnance plant is an eight-year-old modern one-story building of brick and steel, contains 65,000 sq. ft. of floor space, and is located at 4212 N. 124th St. in Wauwatosa, a Milwaukee suburb.

Controls Co. has also contracted to buy 82,800 sq. ft. of property adjoining this plot from the R-W Co., a Wauwatosa construction firm, as a provision for future expansion, according to Becker.

Controls Co. currently maintains its Heating and Air Conditioning Div. in two Milwaukee plants, one at 2200 N. 31st St., the other at 2450 N. 32nd St. Becker said that most of the 31st St. manufacturing operations will be moved to the new Wauwatosa plant in stages over the next six months. A few of the manufacturing activities and certain division functions will be transferred to the 32nd St. plant. After the moves are completed, he said, the 31st St. plant will probably be sold.

Becker emphasized that the moves will entail no personnel or product line changes.

Air Control Products In New Plant

ASHEVILLE, N. C. — The newest subsidiary of Air Control Products, Inc., Leigh Industries, Inc., announced that the complete Air Control line will now be manufactured and stocked at a big new plant here wholly devoted to the production of registers, grilles, and diffusers.

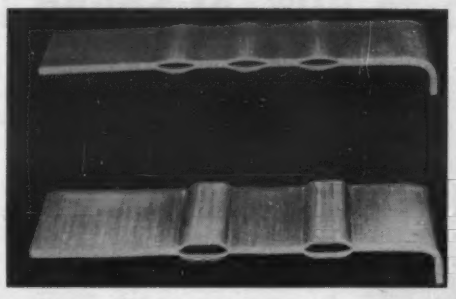
Warehousing facilities at Birmingham, Ala. have been moved to Asheville.

General offices, including sales, advertising, and engineering, will continue to operate out of the company's plant in Coopersville, Mich. Orders will be processed and shipped out of the new Leigh Industries plant.

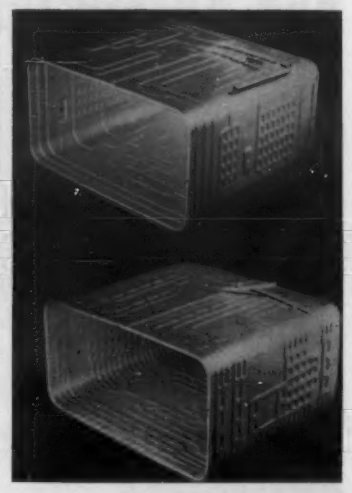
The Leigh Building Products line will also be stocked at the Asheville plant.

The announcement said Leigh Industries "not only offers better, faster service to the company's customers throughout the nation, but also provides greater manufacturing capacity to meet the growing demand for Air Control products. Modern, high speed equipment and every latest manufacturing technique is being employed.

Harder, Tougher Alloy Placed on Inside Of Evaporators Minimizes Punctures



TUBING inflated within the new bi-alloy Roll-Bond sheet developed by the Metals Div. of Olin Mathieson Chemical Corp. is flatter on the puncture-resistant "hard" or stronger side (top surface of photo) than in conventional Roll-Bond material (lower photo). Bi-alloy Roll-Bond freezer compartments in refrigerators thus have flatter inside walls, facilitating the removal of ice trays and food containers, according to the manufacturer.



INTERIOR of refrigerator evaporator plate made of new bi-alloy Roll-Bond sheet (lower photo) is harder, flatter, and much less susceptible to ice-pick puncture damage than its counterpart made of conventional Roll-Bond material (upper). The improved Roll-Bond has one side made of a harder, tougher aluminum alloy with roughly twice the tensile strength of the metal used in the older form.

EAST ALTON, Ill. — The Metals Div. of Olin Mathieson Chemical Corp. says it has found a way to make freezer compartments of refrigerators much less susceptible to puncture damage from careless use.

The company has announced the development of an improved form of aluminum "Roll-Bond" tube-in-sheet—the material used by many major refrigerator manufacturers for the evaporator plates that comprise the cooling units of freezer compartments.

"The new form of the tube-containing sheet is a bi-alloy version, one side of which is made of a harder, tougher aluminum alloy that has roughly twice the tensile strength of the alloy now used for both sides of conventional Roll-Bond sheet," it was explained.

"This harder alloy is highly resistant to damage by ice picks and other sharp implements, and is expected to result in substantially reduced refrigerator service and repair costs.

"Puncturing usually results from inexperienced homemakers' use of sharp-pointed instruments in defrosting or in removing ice-cube trays and food containers frozen tight inside freezing compartments. When the evaporator plate is pierced, the refrigerant—which is odorless and harmless—escapes and the evaporator usually must be replaced.

"Since studies have indicated that more than 90% of the puncture damage occurs on the inside of the evaporator plate, it is on this side that the harder, tougher alloy of the new Roll-Bond sheet is placed.

"The improved Roll-Bond evaporator material already has been adopted on a commercial basis by Westinghouse Electric Corp.

"In the new material, as in Olin Mathieson's conventional Roll-Bond products, any desired tubular pattern is formed between two aluminum alloy sheets that are metallurgically bonded together by heat and pressure."

The new bi-alloy Roll-Bond material looks slightly different. The convolutions of the tubular pattern are not as pronounced on the "hard" or stronger side —that is, they do not protrude as much. This results in a flatter wall on the inside of the freezer compartments, facilitating the removal of ice trays and food containers, according to the company.

The new bi-alloy sheet is a premium product, priced at about 5% more than the conventional Roll-Bond material. It is hoped the price can be reduced gradually as demand and production increase with a growing market, the company said.

Fram Opens New Plant In Henderson, N. C.

PROVIDENCE, R. I.—Fram Aire Corp., division of Fram Corp., has opened a new production facility in Henderson, N. C.

According to David C. Willson, vice president and general manager, "The new plant has completely new machinery and represents an addition to the Providence production facilities."

The plant will produce Fram Aire's complete line of germ killing heating and cooling filters. The new production unit was located in North Carolina to be close to both markets and material sources, it was noted. The plant has 40,000 sq. ft. of floor space.

"Since the introduction of its line of germicidal heating and cooling system filters, Fram Aire Corp. has sold its products to more than 20 equipment makers and has set up several thousand outlets," the announcement pointed out.

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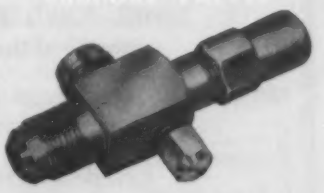

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Radiant Heating, Cooling

Johns-Manville System Said To Be Draft-Free And Absorb Up to 90% of Sound That Hits It

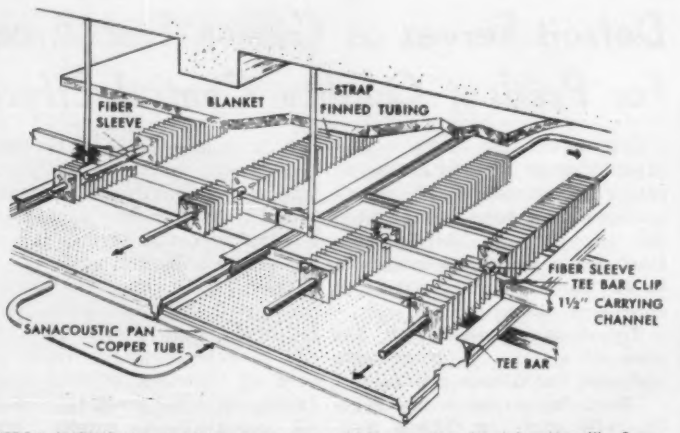
SIMPLICITY of installing the Johns-Manville Sanacoustic HCS System is indicated here. All HCS systems are installed under the responsibility of Johns-Manville. The system gives no-draft heating in winter and cooling in summer, it is claimed. In addition, the system absorbs up to 90% of the room noise that strikes it.

NEW YORK CITY—A new "Sanacoustic HCS System" for radiant heating, cooling, and sound conditioning was announced by Johns-Manville Corp. and released for national distribution through an expanded technical sales organization.

"A number of successful installations already are in hospitals, schools, and office buildings throughout the country," the announcement said.

The Sanacoustic HCS System is claimed to provide no-draft heating and cooling and to absorb up to 90% of the sound that strikes it.

"HCS is made entirely of standard components," Johns-Manville stated. "Because the heating and cooling is in the ceiling, total floor area is unencumbered. This provides more usable space and greater flexibility for changing interior requirements, according to the manufacturer.



SKETCH SHOWS the standard components which comprise the Johns-Manville Sanacoustic HCS. The basic components are: 1. Water-carrying coils; 2. A sound-absorbing insulating blanket; 3. Perforated metal panels which form the finished ceiling.

"Also with the HCS system, fan rooms and risers can be smaller. Ductwork can be 50 to 75% eliminated, permitting lower floor-to-ceiling heights. Fuel savings range to 20%."

Basic components of the HCS system are (1) Water-carrying coils; (2) a sound-absorbing insulating blanket; (3) perforated metal panels which form the finished ceiling.

"In heating, circulating warm water inside the HCS tubing provides heat which is radiated to the steel panels and then downward to room surfaces and occupants," it was explained.

"In cooling, excess heat from room surfaces and occupants is radiated to the ceiling surface and carried away by cool water circulating the same coils. Temperature of the water is controlled to prevent condensation.

"The entire HCS system—carrying channels, water coils, acoustical blanket, ceiling panels, and trim—is installed under the complete responsibility of Johns-Manville. The HCS system permits use of serpentine as well as other arrangements of ceiling coils.

"The Sanacoustic HCS System is designed for both heating and cooling. Or in buildings such as schools—where no cooling would be required during summer vacations—the ceiling may be installed for heating only. But if the time comes when school also is conducted throughout the summer months, the ceiling could easily be adapted to radiantly cool the building.

"With the HCS system, controls may be of the zone or individual room type. Provisions for lag or over-ride are eliminated."

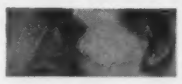
It was also noted that the perforated metal panels "easily snap into place and can be unsnapped just as easily to provide complete accessibility at any time or any place in the system."

Hackett Heads Wisconsin BHC

MILWAUKEE — Frank C. Hackett, of Frank C. Hackett Co., was elected president of the Better Heating-Cooling Council of Wisconsin at a recent meeting of the board of directors.

Other officers elected to serve during the coming year were: vice president, Erhard Roller, E. P. Roller & Sons, and Kenneth Leitgabel, A. F. Leitgabel & Son, re-elected as secretary-treasurer.

*"Why wasn't I aware of those facts?"



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THE *ONLY* WEEKLY NEWSPAPER

Reaching these MARKETS	Serving these FIELDS
• Air Conditioning	• Residential
• Heating	• Commercial
• Refrigeration	• Industrial

York Plans--

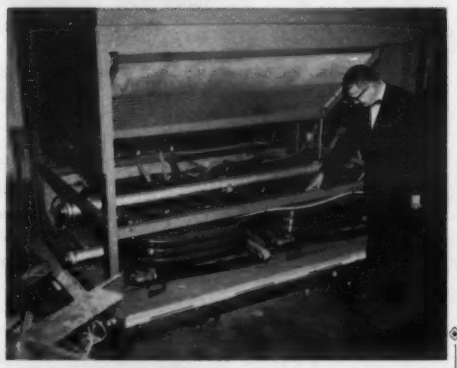
(Continued from Page 1)

because there were proved returns on the investment, Elliot said that he had the feeling that the sale of air conditioning to the homeowner may need "a little more romance."

"If some pretty broad segments of the American public can be 'romanced' into buying swimming pools and sports cars, certainly we should be able to develop an attractive story for such people on air conditioning —something which can benefit them so much every day of the year."

In terms of orders "closed and billed" York Div. showed a substantial increase in 1959 over the previous year, and thus far 1960 is running nicely ahead of 1959, stated Austin Rising, vice president and director of marketing.

RECOGNITION HAD a double meaning when the York, Pa. Chamber of Commerce honored York Div. of Borg-Warner Corp. at a breakfast commemorating the company's 75th anniversary. Plaque was presented to Henry Haase (center), B-W vice president who formerly headed York Div. Haase turned plaque over to Joseph B. Elliot (left), new York Div. president. Right is Robert S. Ingersoll, B-W president.



PACKAGED AIR CONDITIONERS expand in terms of capacity ranges, while design developments help to hold down physical size. In production at York Div. of Borg-Warner Corp. is this air conditioner with four 8¾-hp. compressors, with step control to match load conditions and to reduce costs. William E. Ural, chief engineer for air conditioning units, points out low silhouette of compressor and of wrap-around condenser.

MARKET FOR BIG systems in commercial and industrial buildings is being served by variety of equipment including big heat pumps, centrifugal compressors, large packaged chilled water systems. Step-up in demand and shorter lead-time on orders has called for improved production and assembly techniques. Here a shell for a York centrifugal compressor is being automatically machined as a group attending a recent press conference at York inspects the operation.

York's Three Principal Divisions

York has three principal divisions (1) packaged products (2) engineered machinery and (3) O.E.M. (products built and sold to other original equipment manufacturers).

With its origins in the heavy refrigeration machinery field, York's total volume is now about equally split between its packaged product lines and engineered machinery after deducting O.E.M., mobile, and special products, Rising declared. Its production and sale of room air conditioners are now in the 6-figure bracket annually, and its broad line of central residential systems, both of the conventional and heat pump type, have brought York a steadily improved position in the residential market, said Rising.

Engineered Machinery Increasing Substantially

Sales of the engineered machinery department have registered substantial increases, said Rising, and he attributed this to:

(1) New and improved products (2) Better sales organization and approach to the market (3) Improved and expanded market conditions. In terms of products Rising mentioned specifically Turbopaks, centrifugal packaged water-cooling systems, internally compounded compressors, large tonnage heat pump systems, and three-pipe "Hi-I" systems of air conditioning as developing new market opportunities for engineered machinery.

Engineered machinery products are handled in the field mainly by factory directed engineers, who work with large contractors, consulting engineers, and architect-engineer firms. Talks by Fred Wood, air conditioning sales manager; William Devine, refrigeration sales manager, and Richard Niess, marketing manager for engineered products department, all spoke of the growing market, with the total market for this type of product now running over the $600 million a year figure, it was indicated.

One new type of manufacturing activity has been placed in operation in the Hartley Works at York to make more complete the equipment which the company offers in the engineered machinery field. This consists of assembly to order, from prefabricated parts primarily, of air cooling and air handling units up to 100 tons' cooling capacity and in the range of 2,000 to 36,000 c.f.m. in air handling capacity. This enables those promoting the sale of engineered products to offer air handling equipment in virtually any style to fit design conditions.

Sees 230,000 Central Home Units Sold In U. S. During 1960

Speaking of prospects, William Goldsmith, sales manager for residential air conditioning, said a good year seemed to be in sight for such equipment in 1960, and predicted industry sales of at least 230,000 central residential systems for the year.

The commercial market for packaged units, considered to be in the doldrums for the past few years, has perked up considerably, as York management sees it. The replacement market is showing some signs of coming to life, with officials predicting that possibly 15% of the total volume of commercial packaged units going into replacement sales this year. Also, larger capacities in air-cooled units and some other new designs and concepts in equipment have opened up new markets for packaged units.

York is following through with some developments along this line, among those shown off on the tour of the plant at the conference being a year-round (gas-fired heating) packaged unit for roof mounting and larger-sized packaged units with multiple compressors for operation over a fairly wide range of load variation. The model of the latter type seen in production had four 8¾-ton compressors.

Packaged Products Distribution Policy

Replying to a question about York's policies on distribution of packaged products, Rising said that it had been York's declared policy to distribute through independent distributors where it was possible to establish good independent outlets, but in markets where good independent distribution is not available, it then becomes vital for York to set up factory branches.

Also, management is finding that maintaining part of its distribution through factory branches gives it a "listening post" so to speak to give it a better feel of distributor-dealer problems and relationships.

Sales progress is the third major department, O.E.M. equipment, is continuing to improve, Rising declared. He claimed that York compressors are now being used in about half of the auto air conditioning systems currently being sold, and that there is expansion both in terms of the development and production of equipment, and in sales of small hermetic compressors.

In answering questions about and discussing the future course of the air conditioning industry and York's place in it, B-W President Ingersoll, B-W Vice President Henry Haase who is leaving the presidency of York for new duties in the corporation, and York Vice President and director of engineering A. B. Newton all expressed the thought that more attention will be centered on "treating" air beyond tempering its temperature and relative humidity.

Ingersoll expressed the opinion that control of odors and of airborne disease carrying bacteria might well be immediate objective of producers and installers of air conditioning equipment, and said that research facilities at the Borg-Warner Research Center at Des Plaines, Ill., as well as laboratory facilities at the York Div. are working on these and other areas in which air conditioning can perform a needed function.

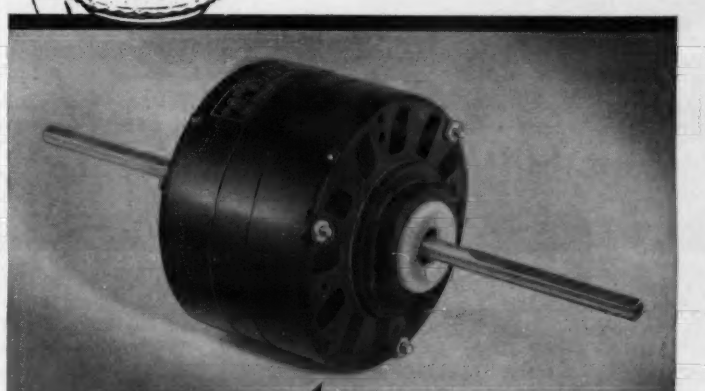
An answer to a question revealed that research on thermoelectric cooling and heating is being carried on in both of these research facilities. However, Newton said that on the basis of the current general state of development use of thermoelectric systems for some time would be confined to applications small in size.

As a "curbstone" opinion Newton hazarded the estimate that thermoelectric systems would have to become "four times better than they are currently" before they would compete with present systems.

In the tour of the York physical facilities the visitors saw the new sound and vibration laboratory, which the management claims is "the most advanced and best equipped facility of its kind."

Called the "Reverbatorium" because it used the technique of magnifying sound and vibration to get measurements, in contrast to the usual "quiet room" methods, the laboratory is designed to provide accurate measurement and subsequent control of sound and vibration with the ultimate aim of giving the user quieter, longer-lasting units and systems. (More details on the sound laboratory will be published later.)

Help Yourself to a Bigger Piece of the Profitable Room Air Conditioner Replacement Motor Business in 1960



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D-153	2	1050/800	230	1/10	½"
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From the Manufacturers

Service Bulletins

In this department, the NEWS presents significant items from information published in the Service and Technical bulletins of manufacturers.

The majority of present-day homes do not have adequate wiring to operate a heat pump and auxiliary heat. It should be remembered that a 5-ton heat pump alone may pull as high as 127 amps during normal operation, while a 3-ton unit may pull approximately 110 amps. This is well above the 60 or 100-amp service which exists in today's home. . . . Another important consideration—if there is a 3-phase service, make sure the appliances are loaded equally on the three legs of the electrical service.

Properly fused disconnects, as follows, should be provided on each item. These should be located for easy servicing indoors. If local codes permit, a disconnect that controls the outdoor unit may be installed on the outdoor unit for easy servicing.

3 hp.—single phase—30 amp, 2-pole disconnect.
3 hp.—three phase—30 amp, 3-pole.
5 hp.—single phase—40 amp, 2-pole.
5 hp.—three phase—40 amp, 3-pole.

Fuse each 5 kw. heat section separately with 30 ampere, 2-pole disconnects.

PEERLESS CORP.

* * *

The use of liquid desiccants (anti-freeze compounds), leak "detectors," or any liquids other than specified refrigerant and approved oils voids the warranty on our hermetic condensing units.

BENDIX-WESTINGHOUSE

* * *

(On air-cooled machine rooms.) During the summer, 100% fresh air must be fed to each condenser. This can be assured only if the combined air moving capacity of the exhaust fans and louvers exceeds all the condenser fan combined air moving capacities.

If exhaust fan capacity is borderline (less than 1,000 c.f.m. per hp.) some hot weather recirculation will likely occur on units not directly in the path between incoming louver and exhaust fan.

TYLER REFRIGERATION CORP.

Case History Shows Danger To Cooling System from SO_2 In Air

NEW YORK CITY—The rapid corrosion damage to which air conditioning systems are subject in urban areas where the atmosphere is heavily contaminated by sulfur dioxide is demonstrated in a case history of a 1,720-ton cooling installation in a well-known New York City office building, according to a report by Water Service Laboratories, Inc.

"The structure is the 35-story McGraw-Hill building, at 330 West 42nd St., where leaks at several points in the cooling tower piping gave the first clue to damage only 18 months after the system went into operation," WSL said.

"The building is cooled by packaged air conditioning units using cooling water, circulating through 14 separate cooling tower systems, involving 18 towers in six different locations on the huge structure's various setbacks."

WSL reported that an analysis of the cooling waters "showed a severe acidic condition, with pH's as low as 4.0 in some of the systems. While no evidence of electrolytic damage was found, a serious slime problem was noted, along with foaming, in all of the induced draft towers. Corrosion was well advanced in all the cooling towers of both types, which was attributed to the SO_2 concentration in the circulating water, picked up as it sprays through the atmosphere.

"A thorough cleaning and chemical water treatment program was instituted which carried the system through the 1959 cooling season without further incident."

Chemical treatment of the circulating water was undertaken by Water Service Laboratories, using its patented internal chemistat, a proportional feeding device that was placed directly in the pans of the induced draft cooling towers.

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Wagner Elects Widell Marketing Vice Pres.

ST. LOUIS—Carl E. Widell has been elected vice president in charge of marketing by the board of directors of Wagner Electric Corp. succeeding Harold N. Felton who will remain with the company as a vice president in an advisory and consulting capacity.

C. E. Widell

Widell will be responsible for the over-all marketing activities of both the electrical apparatus and the automotive braking equipment divisions.

After receiving his degree in electrical engineering from Purdue university in June, 1940, Widell joined the Wagner company. He has served in several capacities, including director of research and development.

'Freon' Div. Issues Servicing Guide

WILMINGTON, Del.—"Service Pointers," a comprehensive guide to the use of "Freon" refrigerants in servicing refrigeration systems, has been published by du Pont's "Freon" Products Div.

The booklet, which has 64 pages and 115 illustrations, was prepared by the division in cooperation with the educational offices of the Refrigeration Service Engineers Society for inclusion in the RSES Service Application Manual.

Major sections of the guide cover "Freon" refrigerants, how to deal with contaminants, how to keep systems clean and dry, brazing refrigeration lines, leaks and how to handle them, field-drying systems, charging refrigerants into a system, why refrigerants should not be substituted or interchanged, some suggestions on handling oil problems, and motor burnouts.

Single copies of the booklet may be obtained by "any inquirers in the air conditioning and refrigeration industry who can profitably use the material." Inquiries should be addressed to Frank R. Zumbro, Public Relations Dept., E. I. du Pont de Nemours & Co., Inc., Wilmington 98, Del.

Watsco Catalog Lists Newly Developed Items

HIALEAH, Fla. — Watsco, Inc. announces availability of the 1960 edition of the Watsco Catalog No. 22.

This catlog should be of interest to original equipment manufacturers as well as servicemen and wholesalers, it was stated. Many new and unusual products were developed this past year by Watsco engineers, and are included in the catalog.

The catalog can be had by writing to Watsco, Inc., 1020 E. 15th St., Hialeah, Fla., or may be obtained at the nearest wholesaler.

NEWS readers are invited to write to the editor giving their opinions on any subject of interest to the industry.

Union Carbide Centralizes Product Research In Westchester Laboratory

NEW YORK CITY — Union Carbide Chemicals Co. is now operating its new Technical Service Laboratory in Westchester (Tarrytown), N. Y.

The laboratory is designed to aid in the development and improvement of the products of Carbide's customers.

This facility centralizes and expands Carbide's customer service and use-research that, since 1925, had been carried out principally at Mellon Institute in Pittsburgh but also in several other areas including South Charleston, W. Va.; Whiting, Ind.; and affiliated company laboratories at Bound Rock, N. J.; Tonawanda, N. Y.; and Millwood, N. Y.

"An increased service effort is required to support sales of chemicals in areas undergoing rapid or significant changes," J. A. Field, vice president-marketing, told guests at the opening of the laboratory.

"Customers are wary of changing their formulations, more so than several years ago, and as suppliers, we must be responsive to the needs of our customers. These needs may be defined only by offering complete test data and service backup. Our use-research programs are creative, and as such, are designed to expand and diversify the use of chemicals."

The scope of activities in this modern facility is broad and varied to provide the information needed for the company's more than 400 synthetic organic chemicals and the many end uses into which they go, it was stated.

Typical of the 29 major industry groups in which work is under way at the laboratory are: refrigerants, automotive, petroleum, polyether foams, aerosol propellents, textiles, plasticizers, water-soluble chemicals, detergents and household products, gas purification, and surface coatings.

The laboratory building accommodates about 100 scientists with a supporting and administrative staff of 50 people under the direction of Dr. A. B. Steele.

The main portion is a three-story stainless steel and glass building 300 ft. long and 60 ft. wide. About one-third of the building is devoted to administrative offices and public areas. The remainder is divided into 46 laboratories with 33 adjacent offices.

A mechanical test building is connected to the main laboratory. This building contains a two-story test area overlooked by a mezzanine office area.

Silver Anniversary ARW Directory Lists 450 Wholesaler Locations

CLEVELAND — The largest and most complete directory in the 25-year history of Air Conditioning & Refrigeration Wholesalers has been announced by E. Peter Sorensen, Public Relations Committee chairman.

Containing over 450 wholesale locations in the United States, Canada, Australia, Belgium, and South Africa, it lists the names and addresses of each firm and the principals in the firms. In addition, all firms are listed in alphabetical order.

For the first time, the constitution of ARW as well as the officers, committee members, and regional officers are listed.

"Our membership is the highest in our history and we are proud of this directory, particularly since it is our 25th year of association," Sorensen stated.

The 92-page directory is available free of charge to any member of the air conditioning and refrigeration industry (only one copy to an individual). Additional copies are available at 75 cents each for those who wish more than one copy.

Those desiring the 960 ARW directory should write to: ARW Directory, Dept. N, 21877 Euclid Ave., Cleveland 17, Ohio.

Name Subcommittee To Handle Refrigeration Apprentices In Northern California

SAN FRANCISCO — Under the new agreement, refrigeration apprentices here are being handled by a subcommittee of the Refrigeration Joint Conference Board.

Five are from management and five from the union.

Management members from Refrigeration & Air Conditioning Contractors Association of Northern California are given as:

Ed Perry, coordinator engineer for Morris Mfg. Co.; Larry Fistolara, service manager for Scatena York Co.; Bob Walthew, service manager for Mowat Co.; John Pellegrini of Scotsman Refrigeration Distributors; and C. V. Jack, service manager for National Refrigeration Sales.

Refrigeration journeymen from United Association Local 38 are: E. C. Manley, Pat Barham, Mosby Willis, John Lehane, and Bill Jennings.

ARE you in need of a "just right" man to fill a slot in your organization—the man you are looking for will be reading the

NEWS' CLASSIFIED ADS

Herrick Research Laboratory Dedicated--

(Continued from Page 1, Col. 1)
personal check for $75,000 more into the kitty, and promised an additional $100,000 for scholarships.

Then he launched one of the most moving, emotion-wrung, personal-experience stories ever heard by anybody anywhere.

"I'm just a tool-and-die maker," he began.

Whereupon he proceeded to talk off-the-cuff and from-the-heart so eloquently and impeccably that even "old pro" speakers in the audience were dabbing with pocket handkerchiefs.

As for the facilities of Purdue's Herrick Lab—take the word of such expert examiners as Paul Augenstein, Paul Penn, John Haines, Walt von Meyer, and Prof. Fahnestock of rival University of Illinois. In concert, they averred:

"Clean, neat, adequate, exceptionally promising."

Purpose of Laboratory

What results can sideliners and bystanders expect from this Herrick - Purdue Laboratory? It's dedicated to:

(a) Environmental research —which is a nebulous thing in itself . . . difficult to pin down commercially . . . but which embraces the hope of progress for this industry.

(b) Thermodynamic mathematical investigations which may reduce heat-transfer and mass-transfer dilemmas to workable formulae. . . .

(c) Recruiting and training of bright young scientists and engineers who can advance the heating, refrigeration, and air conditioning industries for many years to come.

Without doubt, the latter objective has the greatest long-term importance, in the view of those who attended this all-star conclave at West Lafayette, Indiana.

Dedication ceremonies for the "Purdue Center for Research in Refrigeration and Climate Control—the Ray W. Herrick Laboratories" (official cognomen) included guided-tour inspection trips, luncheon, banquet, cocktail parties, and a technical session.

The latter (which consisted of two faculty lectures) left the assembled guests-from-industry speechless, breathless, bewildered, and bubbling.

"We are doing basic research in heat transfer, mass transfer, thermodynamics, and fluid mechanics, all directed toward solution of problems in refrigeration and air conditioning," said Prof. Fontaine, co-director of the laboratories and serving as chairman of the dedicatory committee. "In addition, we are attempting to bring together through research the basic subject matter areas of mechanical engineering and environmental physiology for the purpose of enlarging the scope of climate control and to increase productivity in agriculture and industry.

15 Mechanical Engineering Grads

"We hope and feel that we are providing a service to the industry by furnishing trained manpower, basic information, idea exchange, and the opportunity for pin point research aimed at specific problems. We have already graduated 15 graduate students in mechanical engineering, 11 with master's degrees, and four with doctoral degrees. Currently there are 15 graduate students enrolled in this field, four of whom are condidates for PhD. degrees."

Prof. Jack Chaddock, of the mechanical engineering staff, offered a good example of the depth of the research activities in his talk on "The Relation Between Heat and Mass Transfer in Air Conditioning Processes."

Second technical lecturer, Prof. Fred Andrews, made the love life of pigs, poets, and politicians seem worthy of further investigation *(and subsidization!)* by the assembled capitalists of the air conditioning industry.

Getting down to cases about Purdue's Herrick Research Laboratories (what was exposed on the "guided tour" inspection trips):

Fundamentally there are four environmental conditions which it seeks to control and investigate: temperature, humidity, light intensity, and air movement.

Chambers in the east wing thereupon have been made capable of sustaining temperature ranging from -30° to 120° F.

Wall, floor, and ceiling temperatures of the two experimental chambers are designed to maintain constant temperatures. Also, within each chamber, the floor temperature and the ambient temperature are independent of each other.

Thanks to these stringent criteria, it is possible (in all the chambers) to find floor conditions at 100° F. and the ambient temperature at -30° F., or the floor at -30° F. and the ambient temperature at 100° F.

Problem of maintaining constant wall and ceiling temperatures was solved by surrounding each chamber with an annulus through which 10,000 cu. ft. of air circulates per minute.

Controlling humidity was particularly difficult for these Purdue people. Animals (especially swine, cattle, sheep) give off large amounts of energy. Much of this animism is latent heat from evaporation (which raises the moisture content of any enclosure).

Equipment which disposes of most of this constantly-produced latent heat moisture — rapidly and efficiently — is in evidence.

As a special feature, the Purdue system limits air movement in these experimental "chambers" to any desired degree. (In addition, it screens out most of the airborne bacteria which might enter.)

Wide range of operating conditions demanded for these experimental "cells" prodded Prof. Fontaine and his colleagues to install three separate refrigeration circuits in their research "lab."

All three have two stages, with 50 hp. in each stage—for a grand total of 300 hp. of refrigeration capacity.

The original building which forms the nucleus of the Herrick Laboratory now consists of four separate sections: a bank of offices, two areas which contain partial climate control chambers (in addition to sections for feed and animal storage) plus an environmental laboratory.

Every Purdue "climatology" student is provided with constantly available high pressure steam, low pressure steam, 200-volt single-phase and three-phase electric current, plus 110-volt electricity, for his experiments.

Readily available water, gas, and compressed air are on tap. Thus, almost every square foot of floor area can be useful for research.

Each graduate student who is working on a project in the Herrick Laboratory enjoys adequate instrumentation for his particular needs. And this is immensely important, because instrumentation is the key to valid reporting.

Controlling Mass Flow Rate Through Flexible Orifices

One Purdue researcher (Richard Ulrich) solved significant problems of controlling mass flow rates of liquids through flexible orifices in the Herrick Lab.

Ulrich (an instructor in mechanical engineering) observed that—in a closed flow system—a small orifice will deform as liquid flows through it.

By an ingenious series of experiments, he developed a mathematical equation which describes characteristics of such a system, and provides a means of predicting flow rates for various conditions.

After identifying the specific deformation (which varies in different materials) Ulrich found that he could control mass flow rates by a simple, economical—and almost foolproof system.

Another pregnant study developed in the Herrick Laboratory involved the determination of heat transfer characteristics of extended surface heat exchangers.

It is extremely difficult to separate convective heat transfer from radiant heat transfer in practice, because the geometry of these parallel differentials is so complex.

Beginning with the premise that convective heat transfer is a function of air movement, the Herrick Lab built a vacuum system in which students can isolate and measure heat transferred by radiation.

By subtracting radiant heat transfer, as measured by a vacuum system, they have established an accurate yardstick of convectivity for this type of heat exchanger—plus configuration factors associated with radiant heat.

Laboratory's Statement of Intent

Among other research projects to be expected from the Herrick Laboratory, the following "statements of intent" are prime:

(1) A study of viscosity as a physical property of refrigerants at extremely high and low temperatures in both the liquid and vapor phases.

(2) A study of mass transfer and heat transfer, in an attempt to discover the reasons for varying condensation rates of water on different surfaces under the same ambient conditions. Among the substances being studied are wood, aluminum, steel, and brass.

(3) Measurement of the proportions of various gases found in sealed refrigeration systems which result from the decomposition of the refrigerant present.

Notwithstanding this promising progress at Purdue (in applying known principles of heat transfer and refrigeration) two types of information still are sought and delved into there:

(1) More profound understanding of excess energy removal—as a basis for solving complex physical and engineering problems involved in heating, air conditioning, and refrigeration.

(2) More information about the effects of controlled climates on animal and human physiology.

Pair of Prime Immediate Objectives

To dissolve these dilemmas the Herrick Laboratory has a pair of prime immediate objectives.

First, it hopes to become a center for the collection, analysis, correlation, and dissemination of data on climate control and its effects on human beings and animals.

Second, it intends to provide unique facilities and opportunities for graduate study and research on the environmental physiology of temperature and humidity.

Among industries whose interests will be furthered both by the research carried on at the Herrick Laboratory, and by the trained scientists and engineers which it produces, are:

The food processing industry, the air conditioning industry, the farm feed industry — plus the construction, materials, transportation, home building, instrumentation, and controls businesses.

Roles played by the engineer and the physiologist at the Herrick Laboratory are satisfyingly complementary. While one tells us how man can remake the weather, the other reveals how weather influences man and animals.

Caen Comment--

(Continued from Page 1, Col. 4)
San Francisco Chronicle and self-styled "champion of Baghdad by the Bay," following a hot spell which on June 2 brought a 95° F. temperature to San Francisco, hottest day in 17 years. Considerable smog compounded the discomfort.

Temperatures were even higher—102° F.—down on the Peninsula, and in the central valley of northern California it got really sizzling, with 107° F. registered in Sacramento and 111° F. in Stockton.

Sun Oil Bulletin

PHILADELPHIA—A technical bulletin on heat-transfer oil is now available from Sun Oil Co., Industrial Products Dept., 1608 Walnut St., Philadelphia 3, Pa.

REPRINTS SELLING FOR PROFIT.

By Frank Klein—Only $1.00 ea. Clip this ad and mail with your name and address to: Air Conditioning, Heating & Refrigeration News, 450 W. Fort St., Detroit 26, Mich.

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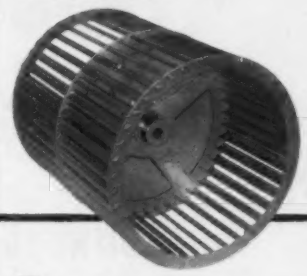
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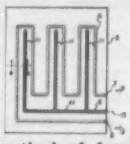
PATENTS

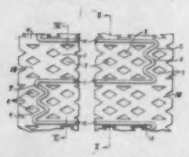
Week of Jan. 12

2,920,377. EVAPORATOR STRUCTURE AND METHOD OF MANUFACTURE. Alfred G. Janos, Louisville, Ky., assignor to General Electric Co.



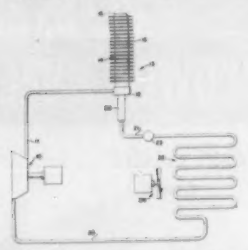
1. In a method of forming an evaporator having defrost means, the steps comprising superimposing one upon the other two sheets of metal having a stop-weld material arranged therebetween in at least two separate and continuous paths, said paths each being exposed on an edge of the sheets, roll-bonding said two sheets into one by rolling said sheets at a temperature sufficently high to cause said sheets to completely forge together into one except where said stop-weld material has been arranged. . . .

2,920,380. METHOD OF MAKING PLATE-TYPE HEAT EXCHANGER. Henry M. Williams, Godfrey, Ill., and Huntly M. Campbell, White Plains, N. Y., assignors to Olin Mathieson Chemical Corp., East Alton, Ill.



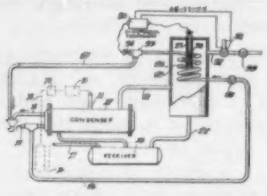
1. In the method of making a one-piece heat exchanger plate of pressure welded construction having distended tube passageways including substantially parallel lateral runs and integral expanded web portions adjacent said passageways, the improvement comprising prior to distention of said tube passageways. . . .

2,920,457. REFRIGERATION SYSTEM WITH VORTEX MEANS. James L. Bartlett, Jr., Rolling Hills, Calif., assignor to The Garrett Corp., Los Angeles, Calif.



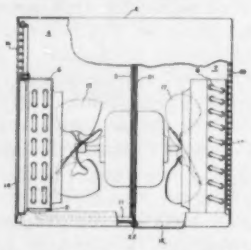
1. A vapor cycle refrigeration system comprising: means for increasing the pressure of a refrigerant; a vortex tube; the inlet of said vortex tube being connected to the discharge of said pressure increasing means; the cold outlet of said vortex tube being connected to the evaporator of the refrigeration system; and the outlet of said evaporator being connected to the inlet of said pressure increasing means.

2,920,458. REFRIGERATING SYSTEM WITH PURGE MEANS. John E. Watkins, Maywood, Ill.



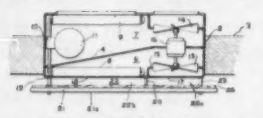
1. In a refrigerating system, in combination, a compressor, a condenser into which said compressor discharges a gaseous mixture of refrigerant and air under pressure, means for circulating cooling water through said condenser to extract heat from the gaseous mixture and condense the refrigerant to liquid form, any air entrapped in the refrigerant being collected in the upper part of said condenser, a purging tank disposed substantially at the highest point in the system. . . .

2,920,459. ROOM AIR CONDITIONER. William T. Ladusaw, Louisville, Ky., assignor to General Electric Co., a corporation of New York.



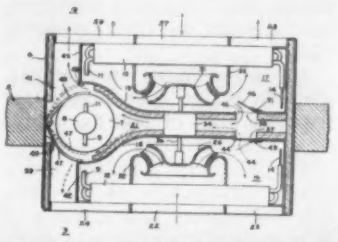
1. A self-contained air conditioning unit comprising a casing, a barrier dividing said casing into an evaporator compartment and a condenser compartment, an evaporator in said evaporator compartment and a condenser in said condenser compartment, means for circulating separate streams of air through each of said compartments in thermal exchange with said evaporator and said condenser. . . .

2,920,460. SELF CONTAINED AIR CONDITIONER HAVING NOISE ATTENUATING MEANS. Leonard W. Atchison, Louisville, Ky., assignor to General Electric Co., a corporation of New York.



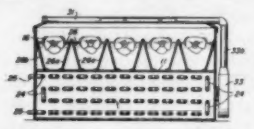
1. An air conditioning arrangement for an enclosure comprising a self-contained air conditioning unit mounted in an outer wall of said enclosure, said air conditioning unit having inlet and outlet openings in the front thereof, a substantially planar panel arranged directly in front of said air conditioner but spaced a short distance therefrom to permit air to flow through the space between said front of said air conditioner and said panel. . . .

2,920,461. AIR CONDITIONING APPARATUS. Leonard W. Atchison, Louisville, Ky., assignor to General Electric Co., a corporation of New York.



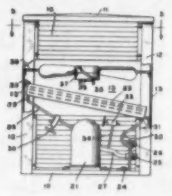
1. In an air conditioning unit of the type adapted to be mounted in an aperture in the outer wall of a room, the combination comprising a casing, a pair of spaced partitions dividing said casing into inner and outer compartments and forming a motor enclosure therebetween, said inner compartment having a plurality of openings leading to said room and said outer compartment having a plurality of openings leading to the outside, a compressor and a pair of heat exchangers mounted in said casing in refrigerant flow relationship, one of said heat exchangers being disposed across at least one opening leading to said room and the other heat exchanger disposed across at least one opening leading to the outside. . . .

2,920,462. APPARATUS FOR QUICK FREEZING FOOD ITEMS. Louis A. Roser and Glen A. Roser, Salt Lake City, Utah.



1. Apparatus for quick freezing buoyant food items, comprising an elongate brine tank adapted to receive and retain a body of brine; a horizontal partition wall extending longitudinally of the tank, intermediate its height and short of its ends, to divide said tank into an upper flow channel and a lower flow channel intercommunicating at their respective opposite ends, means at one end of said tank for continuously introducing food items thereinto. . . .

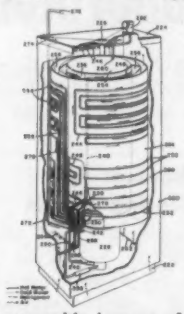
2,920,463. REFRIGERATING APPARATUS. Richard E. Gould, Dayton, Ohio, assignor to General Motors Corp., Detroit, Mich.



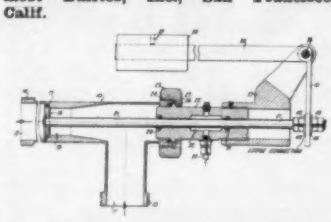
13. A liquid dispenser including a cylindrical roll forge welded unitary plate containing a refrigerant evaporating passage and a liquid passage extending along and adjacent each other, said cylindrical plate being provided with spaced metal walls transverse to its axis to form a storage tank, said liquid passage discharging into said tank, liquid dispensing means connected to said tank, and refrigerant liquefying means connected to said evaporating passage.

2,920,464. AIR COOLED CONDENSING UNIT. Allen Trask, Utica, N. Y., assignor to International Heater Co., Utica, N. Y.

1. In an air cooled compression type refrigeration condensing unit comprising a rectangular enclosing cabinet for outdoor installation having a base, four corner posts attached to said base, a top cover supported by said corner posts, and side panels for enclosing each of its four sides; said cabinet enclosing a fin tube condenser coil, a motor driven propeller fan, and a shroud for said fan; a lower compartment in said cabinet defined by said cabinet base as its base, said condenser coil arranged as a transverse cabinet partition as its top, and including removable louvers of said side panels at its sides. . . .

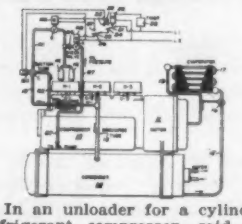


2,920,643. BACK PRESSURE REGULATING VALVE. John P. Terrett, San Francisco, Calif., assignor to Foremost Dairies, Inc., San Francisco, Calif.



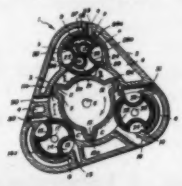
1. Pressure responsive apparatus for controlling flow of fluid material undergoing processing from a heating unit of the direct fluid injection type to the lower pressure of an evaporative cooling chamber, said apparatus comprising a body having inflow and outflow passages, an operating rod extending into the body, a movable valve member disposed within the body and carried by the inner end of said rod. . . .

2,920,812. UNLOADERS FOR REFRIGERANT COMPRESSORS. Arthur W. Courtney, Jr., Grottoes, Va., assignor to Westinghouse Electric Corp., East Pittsburgh, Pa.



1. In an unloader for a cylinder of a refrigerant compressor, said cylinder having an unloader cylinder for opening the suction valve means of said compressor cylinder when fluid is supplied into said unloader cylinder, the improvement comprising a gas control valve connected to said unloader cylinder, an oil control valve connected to said unloader cylinder, a three-way valve connected to said gas control valve, gas tubing connecting said three-way valve to the discharge gas side of said compressor. . . .

2,920,814. ROTARY COMPRESSOR SYSTEM. Yves Breelle, Rueil-Malmaison, France, assignor to Institut Francais du Petrole, des Carburants et Lubrifiants, Paris, France.



1. A rotary compressor engine comprising, in combination, a casing, a central chamber in said casing at least one compressor unit comprising an intake port for a gaseous fluid to be compressed and an outlet port for the compressed fluid, said intake port opening into said central chamber, a motor unit comprising an intake port

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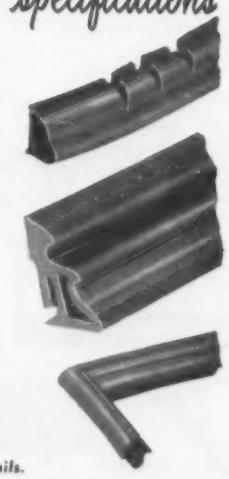

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PRODUCT DEVELOPMENT engineer (Air Conditioning) — National concern desires engineer that can head up air conditioning and heat pump program. Must be capable of making original design layouts on packaged and split system residential air conditioners. Should be well acquainted with UL test procedures. Excellent benefits including tuition refund plan for advanced study in local university and schools. Location, western New York state. Salary commensurate with experience. BOX A6561, Air Conditioning, Heating & Refrigeration News.

PROCESS ENGINEER—Heavy experience in process engineering preferably in small to medium home air conditioning units. Applicant must be familiar with modern methods of manufacture and tooling. Location, western New York state. Salary commensurate with experience. BOX A6562, Air Conditioning, Heating & Refrigeration News.

WE HAVE opening in Midwest for experienced commercial refrigeration salesman to call on retail trade. We advance expenses and pay maximum commissions. Earnings $12,000.00 on up commensurate on ability. Many fringe benefits including profit sharing plan. Give resume' selling experience and present earnings. All replies confidential. Our men know of this ad. Reply to BOX A6565, Air Conditioning, Heating & Refrigeration News.

SALES ENGINEER — Experienced in heating, air-conditioning and plumbing field to call on O.E.M. in Mid-west territory. State qualifications. BOX A6568, Air Conditioning, Heating & Refrigeration News.

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ATTENTION REFRIGERATION Servicemen: Send for catalog listing values in refrigeration and air conditioning parts, relays, capacitors, compressors. Savings up to 50%. WALTER W. STARR, 2833 Lincoln Ave., Chicago 13, Illinois.

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PITTSBURGH AAC-150 Electrodryer dehumidifier complete with VSD Kinney Vacuum Pump, 2 h.p. motor, all controls and timers. Dries air at maximum pressure of 150 lbs. per square inch. Removes all moisture. Excellent for refrigerator manufacturer, compressor rebuilding or service company. Bargain! BOX A6566, Air Conditioning, Heating & Refrigeration News.

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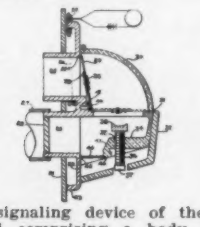
FOR SALE: A well established air conditioning contract service business, 16 years old; with excellent reputation. Franchised dealer of Chrysler Airtemp, in a fast growing Florida Metropolitan center. Reason for selling: advanced age and failing health of owner. BOX A6564, Air Conditioning, Heating & Refrigeration News.

for gaseous combustion constituents to be compressed and an outlet port for the combustion products, which latter intake and outlet ports open into said central chamber separately from said intake and outlet ports of said compressor unit, and each of said inlet ports being free from communication with any of said outlet ports, and at least one combustion chamber. . . .

2,921,157. FILTER GAUGE. Joseph Arthur Stein, Pittsburgh, Pa., assignor to Bacharach Industrial Instrument Co., Pittsburgh, Pa., a corporation of Pennsylvania.

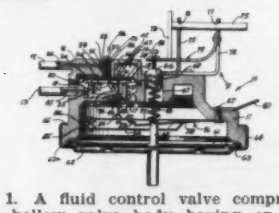


1. A signaling device of the class described comprising a body having two ported abutments therein disposed in planes which intersect, a vane pivotally supported in the housing with its pivoting axis at the line of intersection of the two planes and movable from a postion over the port in one abutment to a position over the port in the other, a transparent enclosure in the body enclosing the arcuate space through which the vane moves from a position over one port to the other and through which the vane is visible, said vane being movable in response to a force differential upon opposite faces of the vane established through the ports.

Editor's Note: Patents described here have been selected from the "Official Gazette" of the United States Patent Office. They offer only a brief summary of each invention. In some instances only the first part of the digest is presented.

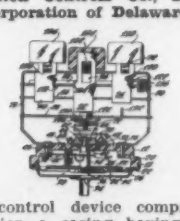
Printed copies of patents, reissued patents, and patent designs may be secured from the Patent Office; patents and reissues are 25¢ each, while designs are furnished at 10¢ each. Address orders to: Commissioner of Patents, Washington 25, D. C.

2,921,158. PNEUMATIC CONTROL VALVE. Wesley L. Taylor, Glenview, Ill., assignor to The Dole Valve Co., Morton Grove, Ill., a corporation of Illinois.



1. A fluid control valve comprising a hollow valve body having an inlet leading thereinto and spaced outlets leading therefrom, a bore within said valve body communicable with at least one of said outlets, a seat defining one end of said bore, a movable apertured diaphragm extending across the hollow interior of said valve body intermediate at least two of said outlets and cooperable with said seat to control fluid flow into said bore from said inlet, and valve means cooperable with the aperture within said diaphragm to control the flow of fluid from said inlet to another of said outlets.

2,921,159. PUSH BUTTON CONTROL DEVICE. Robert W. Elderton, Bloomington, Ill., and Robert J. Wodtke, Columbus, Ohio, assignors to Robertshaw-Fulton Controls Co., Richmond, Va., a corporation of Delaware.



1. A control device comprising in combination a casing having a pressure sensitive diaphragm disposed therein, a first contact mounted in said casing, a second contact operatively associated with said diaphragm, a bracket mounted on said casing, a plurality of push rods slidably supported in said bracket, resilient means urging each of said push rods toward one end of a path of confined travel in said bracket, a latch bar having a plurality of slots therein for receiving said push rods, said latch bar being slidably supported in said bracket. . . .

H. H. Ikenaga

S. L. O. Tom

Honolulu Distributor Fills 3 Major Posts

HONOLULU, Hawaii — In Honolulu recently three important positions were filled at the Air Conditioning Co. of Hawaii, distributor of Carrier air conditioning equipment in the Islands.

B. T. C. Ching

Jay A. Quealy, president, has appointed Stanley L. O. Tom as head of the sales department. Tom has been with the firm since 1954. Previous to this time he attended the Milwaukee School of Engineering and worked as an air conditioning test engineer for General Electric at Bloomfield, N. J.

Herbert H. Ikenaga, graduate of the University of Hawaii, is the new head of the engineering department. Ikenaga has been with the firm since 1957.

Bernard T. C. Ching has been appointed in charge of the firm's air conditioning installation and service department. Ching has studied air conditioning and refrigeration in Chicago and for the past 15 years worked in the department that he now heads.

Buffalo Forge Names Charles W. Lockhart Sales Vice President

BUFFALO — Appointment of Charles W. Lockhart as vice president, sales was announced by Buffalo Forge Co.

Lockhart

Lockhart joined the company's Engineering Department in 1936, was manager of the firm's San Francisco sales district from 1945 until 1953 and, most recently, has served as sales manager of the Air Handling Div. He is an engineering graduate of Cornell university.

Richard T. Demarest Joins L. J. Krause

MINNEAPOLIS — Lin J. Krause, president of L. J. Krause Co., manufacturers' representative of Minneapolis, covering the upper midwest, announced the appointment of Richard T. Demarest as associate in this organization established in 1949.

Demarest was formerly sales manager of Roberts Supply Co., plumbing, heating, and air conditioning wholesaler of Omaha, Neb. Previously he served for 20 years in sales managerial capacities for manufacturers of furnaces, boilers, and air conditioning equipment.

Philco Makes Major Organizational Shifts

PHILADELPHIA — Philco Corp. has made several major organizational changes to strengthen its operations in line with the current trend toward larger dealerships, it was announced by President James M. Skinner, Jr.

Larry F. Hardy, formerly vice president and general manager of the Consumer Products Div., has been named to the newly-created position of vice president-public relations.

Another newly-created position, director of personnel, will be filled by Robert M. Jones, who was formerly Philco's director of public relations.

Henry E. Bowes, formerly vice president-marketing, will become vice president and general manager of the Consumer Products Div. with responsibility for the division's operations.

Robert G. Urban becomes vice president-marketing. Urban was formerly vice president and assistant to the vice president-marketing.

Rayford E. Nugent has been appointed vice president-assistant to the vice president, marketing. Nugent's former position was vice president-sales.

Frederick D. Ogilby has been named director of sales, with responsibility for the company's independent distributors, associate distributors, Firestone accounts, and factory branches. Ogilby was formerly vice president and director of special market planning.

Continental Air Filters Names Sydney S. Emison

LOUISVILLE, Ky. — Sidney S. Emison has been named vice president of Continental Air Filters, Inc.

He has been connected with Continental, except for an interval of a few months, since October, 1948. Emison is a graduate of Purdue university and is currently earning an MBS degree at the University of Louisville.

Continental manufactures mechanical air filters for industrial, commercial, institutional, and residential use.

Tersco Opens New Office, Warehouse

FORT WORTH, Texas—Paul Cato, president of Tersco here, announced the formal opening of the firm's new office and warehouse at 3216 West Vickery.

On Saturday, June 4, Tersco was host to customers, manufacturers, and other invited friends. Guided tours were conducted and refreshments served.

Tersco has been a member of Air Conditioning & Refrigeration Wholesalers since 1946 and Cato presently serves on the board of directors representing Region 8.

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By Frank Klein—Only $1.00 ea. Clip this ad and mail with your name and address to: Air Conditioning, Heating & Refrigeration News, 450 W. Fort St., Detroit 26, Mich.

Field Fabrication Kit Available For 'E Z Kleen' Air Filters

MADISON, Wis.—A kit for field fabrication of "E Z Kleen" air filters for furnaces and air conditioners is now available, it has been announced by Research Products Corp.

"Because stocking of many unusual sizes involves a huge inventory problem, and because delivery of factory made special sizes unavoidably delays service to the user, the new kit will prove invaluable to jobbers and dealers," it is claimed.

Filters can be field fabricated for both ½ in. and 1-in. applications. The only inventory required is the channel stock (8-ft. lengths) and the filter media (32 in. by 40 in.).

Recommended tools in the kit include a frame notcher, frame crimper, frame roller, a punch, rivets, and rivet pliers. The plans for a filter layout table, which makes measuring, cutting, and assembling easy and fast are also available.

"The filter media is that used in the manufacture of the trim-to-size E Z Kleen for room air conditioners," Research Products stated. "It is constructed of bonded layers of slit and expanded aluminum foil and is easy to cut and safe to handle.

"Field fabricated E Z Kleen filters have the same properties as the standard, factory-made E Z Kleen filters—including odor and bacteria removal in addition to normal dust, dirt, and pollen trapping.

Complete information may be obtained by writing to Research Products Corp., Madison 1, Wis.

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Hutchinson Dies--

(Continued from Page 1, Col. 5)

became ASHAE, he continued as executive secretary and manager of publications.

He entered the publishing field with David Williams Co., New York City, in 1914-15. He then served from 1916-17 as assistant and then associate editor of *Metal Worker, Plumber and Steam Fitter* in New York City and as western editor for *Sheet Metal Worker and Heating Engineer* in Chicago from 1920-21.

Born Nov. 23, 1896 in Brooklyn, Hutchinson was the son of Robert Lee and Caroline Estelle (Vaughan) Hutchinson. He attended schools in Ridgewood, N. J., taking special courses in journalism and engineering. In 1933 he married Janis Louise Barr, who survives him.

Hutchinson's interests and activities were broadly allied with the engineering, publishing, and industry functions of the society with which he was so long associated. In his 37 years of service, Hutchinson witnessed the growth of the society from a small group to that of one of the five largest professional engineering societies.

At the time of his retirement then President Arthur J. Hess paid high tribute to his work, stating, "Probably the most important contribution, among the many he made, was his work on the 'Guide' which he built up into one of the most respected publications of any technical society. To Mr. Hutchinson we owe much more than we can say in words, or do in deeds."

Acme Expanding--

(Continued from Page 1, Col. 2)

Acme's two Jackson, Mich. plants, its new expansion in the south being required to take care of the ever-growing air conditioning market, Weatherwax stated.

In a statement accompanying a regular quarterly dividend of 5 cents per share, Weatherwax told stockholders that sales amounted to $6,979,066 in the nine-month period ending April 30 as compared with $6,486,330 in the same period a year ago. This is a 9.3% increase.

He said Acme's backlog of orders continues at a high level and "it is anticipated that sales for the fiscal year ending July 31, 1960, will set a new record."

After setting aside $203,597 for Federal income taxes at the end of the recent nine-month period, net income was $187,936, an 8.1% increase over a net of $152,892 a year ago after deducting $165,632 for Federal income taxes.

Earnings of 44 cents per share in the nine months just ended compare with 36 cents for the same period last year.

For Your Reprint Copy
"Emergency Diagnosis, Repair of Hermetic Unit Electric Components," by John L. Zant, mail this ad with your name and address to: Air Conditioning, Heating & Refrigeration News, 450 W. Fort, Detroit 26, Mich.
Only 25¢ each.

Air Conditioning Clinic Stimulates Interest In Toledo

TOLEDO—An air conditioning clinic, at the start of the warm weather season, helped Toledo Edison stimulate interest among prospects in this area.

The power company set up the clinic in its Electric Living Center in downtown Toledo. Air conditioning experts were on hand to answer questions and provide advice on the size of unit needed. Area residents were invited to bring in their room dimensions.

To promote air conditioning during the clinic period, the utility used newspaper ads, direct mail, and point of sale display, featuring this theme: "Hot Houses Are for Tomatoes. Live Cool Through the Long Hot Summer With a Room Air Conditioner."

RACCA Sees Threat In Defense Bill Rider-

(Continued from Page 1, Col. 3)

"if passed, this rider would authorize many Federal agencies to expand their already unpopular 'do-it-yourself' activities and would enable many government installations to do their own work with civil service employes rather than subcontract it to qualified contractors.

"Last year," the letter pointed out, "the United States post office department spent a very large sum of money subcontracting the air conditioning of many post offices to qualified contractors, many of whom belonged to RACCA.

"If the theory advanced by the Machinists and the United Auto Workers were to gain foothold in the form of law or even to gain an administrative procedural foothold . . . such agencies as handle air conditioning subcontracting for the United States post office department might, indeed, have an opportunity to avoid the traditional subcontract procedure."

RACCA sees sponsorship of the rider as "part of the major effort now being made by the machinists and certain CIO-UAW unions to make a major grab for construction and maintenance work usually subcontracted to qualified contractors.

"The UAW and the Machinists are being aided, indirectly, in this effort by many large manufacturers holding government contracts and who also have labor contracts with either the Machinists or the UAW.

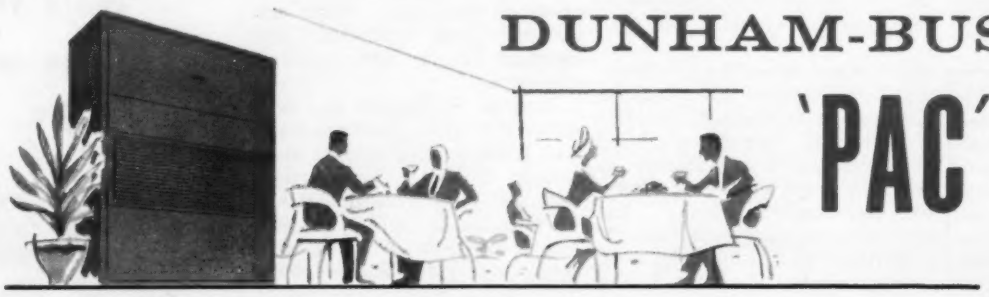
"It is their idea that this would keep many people busy who otherwise might have to be laid off during those periods of conversion to new types of manufacturing.

"This would have the net effect in our own industry," the letter warned, "of creating artificial unemployment in some areas and the long-term effect of creating a whole new body of men in the UAW and Machinists Union theoretically capable of attempting what is ordinarily considered to be pipefitter and plumber work.

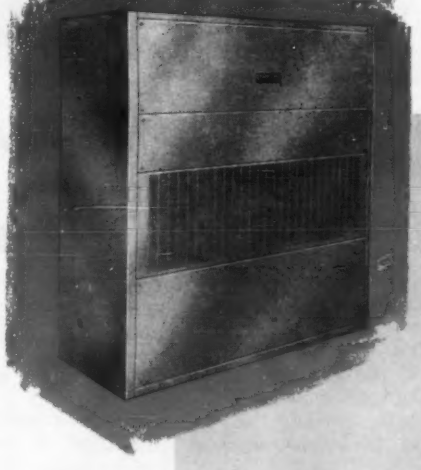
"It would also create the strong possibility that one government agency could subcontract to another government agency such items as remodeling, air conditioning, etc."

New Canadian Mfr.

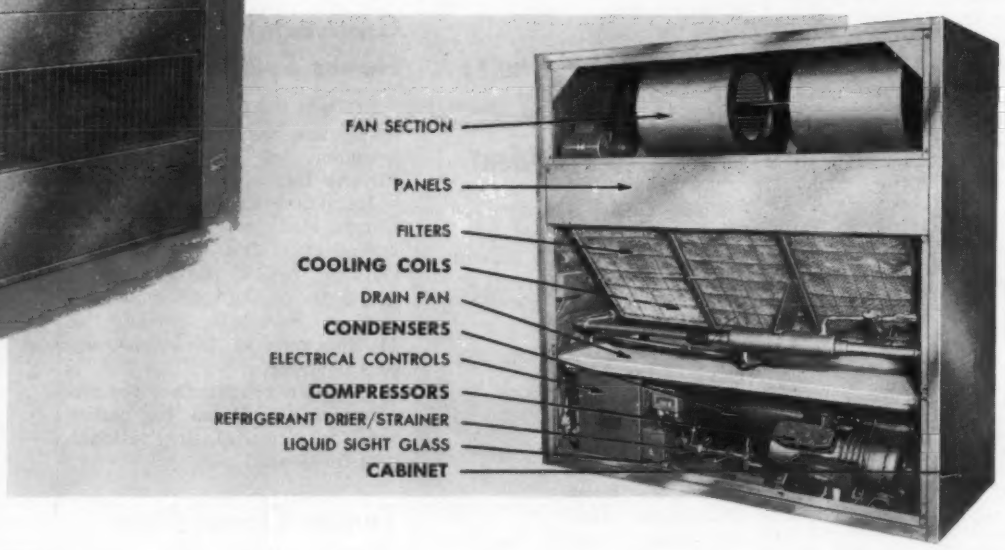
FERGUS, Ont., Can. — Belwood Appliance Co., a newly-formed company located here, will employ approximately 60 men and women in manufacture of refrigeration and other related products. Company plans to have a national sales organization.



DUNHAM-BUSH 'PAC'



Proves how to properly package air conditioning



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"PAC" units are packaged for use, on-premises or remotely installed, in restaurants, stores, offices, clubs, banks, factories, depots or wherever high capacity, self-contained air conditioning units are required. Attractive finish harmonizes with decor practically anywhere.

"PAC" is available in 10, 15, 20, 25 and 30 h.p. capacities.

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